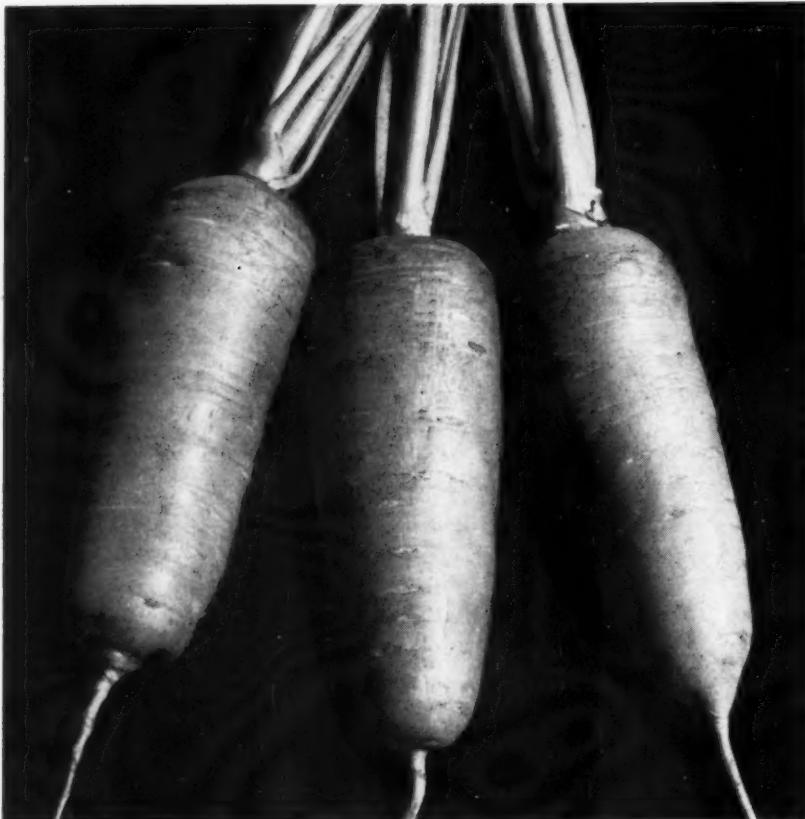


American • MAY • 1953 •
VEGETABLE GROWER



Application is pending for acceptance under section
141 and 142 of the 1947 Copyright Act.



NORTHRUP KING'S ROYAL CHANTENAY WINS ACCLAIM FOR YIELD, APPEARANCE

New NK carrot outyields 24 others in Eastern trials

In carrot trials on Long Island, N. Y., "high yielder in group of 25 entries was Royal Chantenay; and this, combined with better interior qualities, made it the outstanding stock in the trials."

Across the country, Northrup King's newly developed Royal Chantenay is winning favor among market growers, canners and home gardeners. They report "more than 50% greater yield" . . . "handling

costs less" . . . "outstanding for neatness of appearance."

You, too, will like this smooth-skinned, cylindrical carrot. It has excellent flavor and texture. Cuts handling costs in field and factory, increases yields, gives more profits.

Northrup King seeds are sold only through dealers. So contact your Northrup King dealer, and place a future order for Royal Chantenay seed—today.

Send for free descriptive list of new vegetable varieties. Write . . .

NORTHRUP, KING & CO., DEPT. AVG, MINNEAPOLIS 13, MINN.

Seed science serves you at . . .

NORTHRUP, KING & CO.
MINNEAPOLIS 13, MINNESOTA

**Royal Chantenay
carrot praised
by growers from
coast to coast**

"OUTSTANDING"

NEW YORK—Outstanding for yield, neatness of appearance, color.

High yielder . . . outstanding stock in trials.

"CUTS COSTS"

WISCONSIN—More than 50% more yield with Royal Chantenay . . . handling costs less.

"50% MORE YIELD"

COLORADO—Better color than Red Cored Chantenay . . . 50% more yield . . . lower handling costs.

Best in trials . . . most uniform in appearance, shape and color.

"SHAPE, SIZE EXCELLENT"

CALIF., OREGON—Size and shape of root are excellent. Interior color comparable to best Red Cored Chantenay in trials.

***NK strains are
outstanding***

- High Yields
- High Quality
- Low Handling Costs



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VEGETABLE GROWER

(Formerly Commercial Vegetable Grower)

Vol. 1 • MAY, 1953 • No. 5

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New for You

AMERICAN VEGETABLE GROWER

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Editorial Staff

R. T. MEISTER ELDON S. BANTA
E. K. GOULD M. A. FRAZIER

Advertising Manager
EDWARD L. MEISTER

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Please notify us if you change your address,
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Form 3547 requested.

MAY, 1953

TURN THE BEAN RIGHT-WAY FOR LOWER SPRAYING COSTS

The secret to lower spraying costs is in the way you turn. And because you are making only right hand turns you need fewer roadways through the field. You get more crop space, less wheel damage, and more produce to sell.

The John Bean Right-Way Spray Boom can save you time and labor because there is no left wing to make end row turning difficult. Adjustable for height and for nozzle setting, the Bean Right-Way can be used on tomatoes, potatoes, peppers, corn, or practically any row crop. The 3-way nozzle setting gives you plenty of pattern to cover the top, sides, and under-sides of every plant.

THIS YEAR THE JOHN BEAN RIGHT-WAY SPRAY BOOM IS AVAILABLE IN TWO MODELS SPRAYING 42-FOOT AND 32-FOOT SWATHS

John BEAN

Row Crop Sprayers

Send for this catalog if you want complete information on the Bean Right-Way Spray Boom.

JOHN BEAN
DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION
LANSING 4, MICHIGAN • SAN JOSE, CALIFORNIA

Niagara Dusts and Dusters



On Dollars Per Acre Returned YOUR BEST INVESTMENT IN PROTECTION

Food processors, both freezers and canners, are most conscious of insect and disease injury as well as insect count in the produce they buy. Substandard crops bring substandard prices—or don't sell at all. You cannot afford to take a chance with inferior materials and ineffective methods of application.

Better growers everywhere use reliable, proved Niagara dusts and dusters for insect and blight control. They dust regularly from spring to fall,

harvest the top grade crops—the clean crops that command premium prices from the packers.

For professional advice on the seasonal protection you need, consult your friendly Niagara field man, regularly. That's his job, to help you earn greater profits. Call him in now or write us and he will see you.

Niagara CHEMICAL DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Middleport, N.Y., Richmond, Calif., Jacksonville, Fla., Tampa, Fla., Pompano, Fla., New Orleans, La., Ayer, Mass., Greenville, Miss., Harlingen, Tex., Pecos, Tex., Yakima, Wash., Subsidiary, Pine Bluff Chemical Co., Pine Bluff, Ark., Canadian Associate: NIAGARA BRAND SPRAY CO., LTD., Burlington, Ontario.



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MAY

LETTERS TO THE EDITOR

Charter Subscribers

Dear Editor:

Received a copy of your new magazine and was very pleased with it. I receive a number of other farm magazines, but they try to cover too many different subjects.

It is about time someone put out a magazine just for the commercial vegetable grower. Congratulations and the best of luck.

Vineland, N. J.

Leon Colla

Dear Editor:

Enclosed find my check for which please send me your new magazine. Many, many thanks for the sample copy.

Clark Hills, S. C.

J. L. Mason

Dear Editor:

Please start my subscription with the first issue and find payment enclosed.

Wooster, Ohio

Donald Comin

Dear Editor:

Enclosed you will find our check for a two-year subscription. We would appreciate it very much if you would send us back copies from the start of the magazine.

Peoria, Ill.

Myron B. Shoff

Dear Editor:

I received a copy of your first issue and think it is just fine. Here's my check. I expect to be expanding my vegetable acreage to take care of local needs, so information on varieties will always prove of interest to me.

Conneaut, Ohio

John D. Northrup

Dear Editor:

Congratulations on your first issue which was outstanding. If you continue that high a standard in the years ahead, the success of your magazine is assured.

Riverhead, N. Y.

Walter A. Been

Dear Editor:

Having received a sample copy of your new magazine, it would seem to meet a need which has long existed. Will you please enter my subscription for one year, check enclosed?

Decatur, Mich.

Glenn H. Knapp

Dear Editor:

Congratulations on the first issue. I have read every article at least once and am sending my check for a charter subscription.

For the past four years I have been head of the Crop Research Department of the H. J. Heinz Co., and have spent this time at work on the development of new varieties of tomatoes, cucumbers, and squashes. I grow a large number of vegetables each year and am especially interested in varieties.

Bowling Green, Ohio

C. A. John

Dear Editor:

Please send me your new magazine. This year I sold 2,540 strawberry plants and 629 quarts of berries from 480 plants set the spring before.

Bethel, Me.

James Brown

Dear Editor:

We have been looking over your magazine, and we like it very much. Enclosed you will find a check for \$2.00 for a special

gift subscription as stated on the back page of your March issue.

Manheim, Pa.

John F. Cope

These are but a few of the many, many letters from growers who are enthusiastic about the first issues of their new vegetable magazine. We are more than gratified with the response. For information about the new page size and future editorial plans see page 9.—Ed.

New Mechanical Aid

Dear Editor:

Vegetable growers will be interested in a new type material handler developed by a Wisconsin grower. The machine is patterned after small lift trucks used in industry, but instead of a lift there is a large scoop which can carry soil, fertilizer, or any type of material desired. It will hold two to three times as much as a wheelbarrow and can be operated at small cost. It is very maneuverable and is low enough to go under low hanging pipes.

D. A. Krapinski

Melon Seeds Wanted

Dear Editor:

I am interested in locating seeds of unusual muskmelons—melons that are unusual for size, for eating quality, or for late keeping.

I thought perhaps I could get muskmelon seeds, not now available commercially, from readers of AMERICAN VEGETABLE GROWER magazine who are interested in propagating muskmelons.

Route 1, Box 409

Niles, Calif.

Bill Gianella

New Redburt Potato

Dear Editor:

Here is a report on the new Redburt potato which I selected in 1949 out of a field of Satapa on my farm at Glyndon, Minn. The variety is a deeper red color and more elongated than Satapa and more nearly resembles the Pontiac in type.

Two commercial plantings were made in 1952. In Clay County, Minnesota, Redburt planted two weeks later than Pontiac yielded 350 bushels per acre, matured 10 days earlier, and equalled the Pontiac in yield. In Clearwater County, Minnesota, seed planted on slightly over three acres produced 1,032 bushels for a yield of 300 bushels per acre. Less profuse vine growth and more maturity at harvest made for easier mechanical harvesting of Redburt than Pontiac in 1952.

Several samples of Redburt were distributed for culinary tests. The specific gravity of the samples tested averaged 1.089. Reports indicated the general desirability to be good to excellent. The tubers retained their normal shape after boiling with skins removed and the texture appeared to be dry and mealy. The color was indicated as generally attractive although the flesh was indicated as cream to yellowish after boiling.

It is estimated that 150 acres will be planted to this variety in 1953, and according to present plans, will be included in potato variety trials in Minnesota, North Dakota, and possibly other states.

Glyndon, Minn.



The MAN Who BEATS

The WEATHER

Guarantees Himself

ASSURED CROPS

BETTER QUALITY

BIGGER PROFITS!

Insist on HALE

Irrigation Pumping Units
Specifically Designed for Irrigation



BECAUSE HALE UNITS ARE—

- Efficient
- Dependable
- Compact
- Sturdy
- Provide a wide range of performance

Why pay for rain that fails to fall? Only too often drought causes crop losses (as in 1952) that would pay for a complete irrigation system in one season! Hale Irrigation Pumping Units are available in gasoline, Diesel and Electric-driven models. Sizes range from large CIRV (which pumps 1800 U.S. GPM at 60 PSI; 1000 GPM at 170) to the small self-priming NP Unit with capacity of 60 U.S. GPM free flow; 15 GPM at 40 PSI.

Write Dept. AVG for detailed information.
State No. of acres and source of water.

IRRIGATION DIVISION

HALE FIRE PUMP CO.
Conshohocken, Pa.

NEW WEED KILLER ALANAP-I

Drastically cuts cost of hand weeding of vine crops

THE United States Rubber Company's Naugatuck Chemical Division has now developed a remarkably effective pre-emergence herbicide which kills weeds as they start to sprout or before they emerge from the ground. Named Alanap-I, it effectively controls such weeds as pigweed, purslane, lambsquarter, quickweed, ragweed, foxtail and crabgrass.

Presently available to growers, Alanap-I considerably reduces the cost of tedious hand weeding and crop cultivation. One grower reports complete elimination of hand weeding in squash, cucumber, pumpkin, cantaloupe and watermelon, and a saving of more than \$100.00 per acre.

Advantages

Under normal soil conditions, Alanap-I maintains excellent weed control for a period of 3 to 8 weeks, even after heavy rains. Alanap-I is non-hazardous to handlers, warm-blooded animals and vine crops. It is easy to apply and reasonably priced.

When To Use

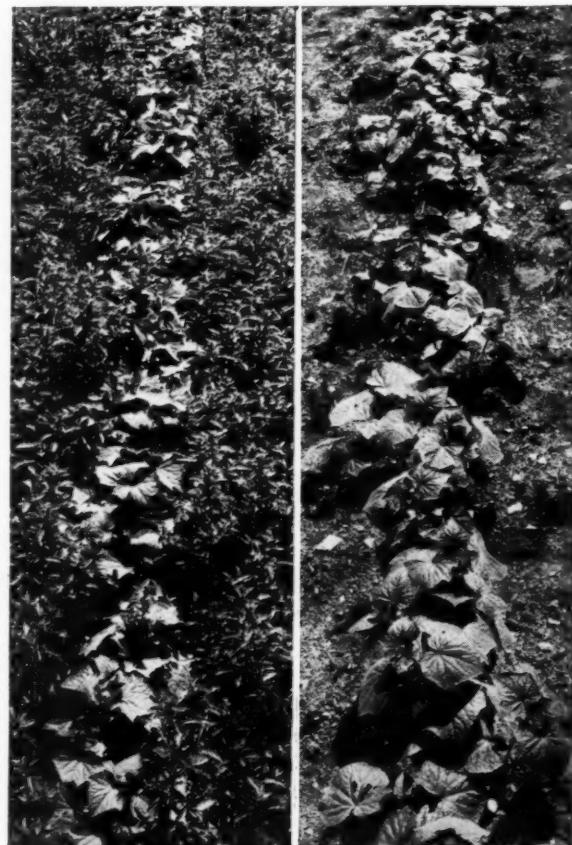
Alanap-I can be used for a pre-emergence weed control by spraying soil surface up to 48 hours after planting. A post-emergence spray may be used after vine crop has emerged but before weeds have emerged. To insure maximum weed control, soil clods should be eliminated.

Now Available

At the present time, Alanap-I is specifically recommended for use in New England, New York, Pennsylvania, Delaware, New Jersey, Ohio, Indiana, Michigan, Illinois, Minnesota, Wisconsin, Iowa and Missouri. Other states will have the unique benefits of Alanap-I after more extensive field tests have been completed.

"ALANAP" Promising on Other Crops

Further testing on cotton, soybeans, peanuts, lima beans and asparagus may allow wider uses in 1954.



ALANAP-I Made This Big Difference

On the left, weeds have nearly choked out this untreated row of young cucumber plants at Associated Seed Growers weed control test plots. Row on right photo was treated at 4 lb. Alanap-I per acre immediately after planting cucumber seed.

*U.S. Pat. No. 2,556,665



Advise local supplier of your needs beforehand to insure availability. For further information about Alanap-I, write to:

UNITED STATES RUBBER COMPANY

Naugatuck Chemical Division, Naugatuck, Connecticut

manufacturers of seed protectants—Spergon, Spergon-DOT, Spergon-SL, Spergon-DDT-SL, Phygon Seed Protectant, Phygon Naugets, Phygon-XL-DDT, Thiram Naugets, Thiram 50 Dust—fungicides—Spergon Wettable, Phygon-XL—insecticides—Synklor-48-E, Synklor-50-W—fungicide-insecticides—Spergon Gladiolus Dust, Phygon Rose Dust—miticides—Aramite—growth retardants and herbicides—MH-30, MH-40—pre-emergence weed killers—Alanap-I.

The VEGETABLE Situation

May 1, 1953

THE INCREASED PRODUCTION indicated for the spring crops of broccoli, cauliflower, lettuce, and onions points to lower prices than last spring. On the other hand, smaller supplies and higher prices are in prospect for carrots and shallots.

IF PRESENT INDICATIONS MATERIALIZE, the spring production of onions, tomatoes, cabbage, lettuce, asparagus, sweet corn, and quite a number of others will be somewhat higher than in 1952. The indicated spring production of commercial vegetables for the fresh market is nine per cent above last year and 10 per cent larger than the 1949-51 average, according to USDA April 10 report.

MODERATE TO HEAVY RAINS the first week in April over the upper part of Florida and on top of the adverse weather in late March, caused damage or setbacks to maturing vegetable crops. Fortunately, the temperature following the rains was cool, for if hot, sultry weather had been prevalent the damage from disease and general deterioration would have been greater. Celery shipments during the first half of April declined approximately 20 per cent and cabbage about 40 per cent due largely to reduced yields. There will also be reduced yields of lima beans, pole beans, snap beans, cucumbers, and cantaloupe. The spring corn crop was possibly the least damaged. The excellent prospects for the spring potato crop have been materially reduced, and the tomato crop also suffered a setback.

UPSTATE NEW YORK GROWERS indicate plans to increase domestic cabbage acreage by five per cent over that available for harvest in 1952. Long Island growers are planning a 10 per cent increase.

EARLY CANTALOUPE PLANTINGS in both the Yuma and Imperial valleys were touched badly in some places by cold weather which struck the west coast generally the first part of March. The effect will be to reduce prospective tonnage from the earliest cap-covered fields, and to indicate a later starting date in both districts than previous warm weather promised. Yuma valley, with lower temperatures, suffered the worst damage. Although losses are spotted, actual plant kill on covered fields may be as high as 30 or 40 per cent, with some fields practically wiped out, and some comparatively untouched. Shippers had been planning on a May 5 to May 10 start this year. Now they say May 25.

MID-APRIL IS THE NORMAL TIME for the start of the New Jersey asparagus season. This state produces one of the largest asparagus crops in the country, second only to California. And for 1953 New Jersey's asparagus acreage is one of the largest, if not the largest, on record, a total of 29,500 acres according to the latest USDA crop reports. Everything is in tiptop readiness for the opening of the season, with many growers installing the latest machinery for harvesting and packing. One of the features of the current season to be watched is the new wirebound crate.

WEATHER CONDITIONS HAVE BEEN FAVORABLE for outside work in various parts of Canada, and considerable planting has been completed, the Canadian Government reports as of the first week in April. In the Essex-Kent district of Ontario the early radish plantings are completed, and lettuce, cabbage and cauliflower seedlings are ready for transplanting in the field.

A MOBILE TOMATO PACKING PLANT has been set up at Progreso, Texas, by E. A. Brown of San Antonio. Mr. Brown has been buying tomatoes in the lower Rio Grande Valley for more than a quarter of a century, and he plans to buy supplies direct from growers there until June when the mobile unit can be moved to other fields. The unit is a small tomato packing plant on a wheeled platform. It can be moved and set into operation within one hour's time and has a capacity of turning out four or five carloads a day. Tomatoes are taken from the grower's trucks, run through mobile sizer and polisher and loaded according to sizes in the over-the-road trucks which haul them to the E. A. Brown ripening warehouse in San Antonio. Mr. Brown believes his portable plant is the only one in Texas and one of only three in the United States.

WINTER PRODUCTION OF CARROTS is now estimated at 11,372,000 bushels, 11 per cent more than the 10,210,000 bushels for 1952. Compared with February 1st, a slight increase in the indicated yield for Texas was more than offset by a reduction in the estimated acreage for harvest in Arizona.

In the Imperial valley of California growers are falling behind in their harvest schedules because of their inability to market all of their carrots. Some acreage has gone beyond the point where it is suitable for bunching and will either have to be topped or abandoned.

THE FIRST FORECAST FOR THE EARLY SPRING TOMATO CROP, 8,235,000 bushels, is 18 per cent above the 6,974,000 bushels for 1952. The acreage for harvest is substantially above last year when considerable acreage in Texas was abandoned. Growing conditions have been generally favorable for the Texas crop. In the Coachella and Imperial valleys of California the earliest spring fields should begin to reach maturity late in April.

SOUTH CAROLINA HAS HAD TOO MUCH RAIN in places, and this has hurt prospects for several crops. Beets and lettuce are moving in moderate, but increasing volume, and movement of cabbage is increasing.

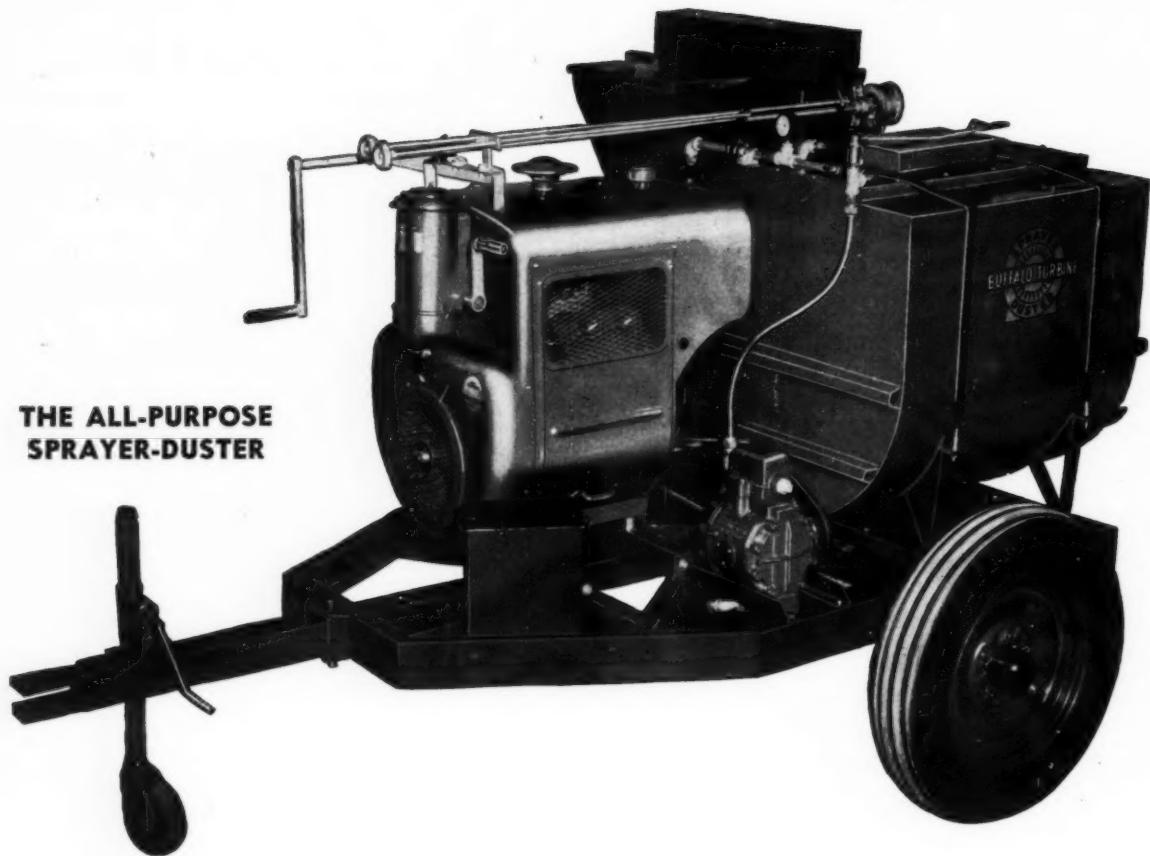
AN ACREAGE OF SWEET CORN FOR PROCESSING nearly as large as was planted in 1952 is indicated for 1953, USDA reports. If the early season prospects materialize, this season's plantings of sweet corn for canning, freezing and other processing will total 511,590 acres, compared to 512,140 acres planted in 1952. The largest increases in acreage are reported in New York, Wisconsin, Washington and Oregon.

With normal acreage abandonment and a ten-year average yield, production would total 1,213,300 tons as compared to 1,510,000 tons last season.

SNAP BEAN ACREAGE for processing is indicated to be 5.4 per cent above 1952 or 128,490 acres. Assuming normal acreage abandonment and a ten-year average yield, production would total 221,000 tons, compared with 1952 production of 241,000 tons. California, Texas, Oregon, Wisconsin, and Maryland report the largest increases in acreage.

VENTURA COUNTY, CALIFORNIA, HAS THE LARGEST CROP OF BROCCOLI ever grown. Hundreds of acres are now being harvested. Most of the crop is being trucked to Los Angeles fresh market outlets.

**THE ALL-PURPOSE
SPRAYER-DUSTER**



WHY VEGETABLE GROWERS ARE BUYING CONCENTRATE EQUIPMENT

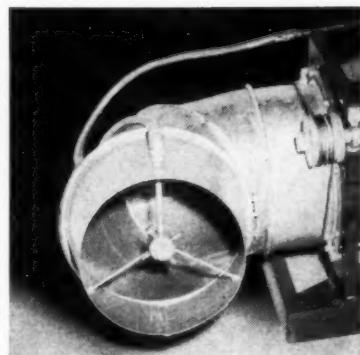
When the idea of developing concentrate spray equipment was first discussed, a number of suggestions were made. These suggestions came from Experiment Stations, chemical companies and growers who were particularly interested in reducing the cost of the annual spray bill. In summarizing the outstanding suggestions, we found that the following items were of extreme importance to the growers:

1. Spraying equipment should be light as possible in order not to unduly pack ground between rows.
2. It should be easily operated by one man.
3. The original cost of the equipment should be reduced substantially.
4. Expensive operation and maintenance should be reduced.
5. The equipment should be constructed to handle concentrate materials which afford greater control and less cost.

The next step was to combine these many suggestions into one piece of machinery which would meet all of the requirements. After a good deal of field testing, this was accomplished in the Buffalo Turbine Concentrate Sprayer. The Buffalo Turbine was the first concentrate sprayer manufactured, and today with many improvements is doing a more than adequate

1. 20%-40% less in original cost.
2. Dust Bin being optional makes it possible for growers to dust when necessary.
3. One-man operation.
4. 75% less in weight.
5. 50% less maintenance cost.
6. Can be pulled by the smallest of field tractors.
7. All-steel-plated liquid tank insures long service.
8. All moving parts which come in contact with caustic spray materials are stainless steel, brass or plated.
9. Less chemical material is needed per acre.
10. Practically no run-off.
11. Greater Penetration.
12. This machine is completely universal—growers can use concentrate liquids, dusts, or both. The equipment can be used in vegetable work, field crops, weed and brush control, and with the simple change of air nozzles, for orchard work.

job for hundreds of vegetable grower owners. The Buffalo Turbine, because it is a concentrate sprayer and because it is designed to meet modern vegetable growing conditions, embodies the following important characteristics:



All growers who wish to increase their profits in 1953 should have the facts on the Buffalo Turbine. If you will write us today, we will be glad to send you full particulars.

BUFFALO TURBINE
AGRICULTURAL EQUIPMENT
COMPANY, INC.
GOWANDA, NEW YORK

AMERICAN VEGETABLE GROWER

Your New AMERICAN VEGETABLE GROWER

MAY is a month of promise. A time when nature comes to life and growers are looking forward to a successful and profitable year. The seed begins to sprout, the tractor roars, and the scene is full of great activity.

It is a most appropriate time to begin a new and improved vegetable magazine, as new and refreshing as your young crop, to help you realize your promise of a bountiful and profitable harvest.

We want you to look over this new magazine as carefully as you watch the progress of your crops. This magazine is dedicated to your prosperity and welfare; and your suggestions, ideas, and inspiration will be given close attention.

You will notice many changes. We have made these changes for your convenience in reading and to make it easier for you to get the vital information necessary for profitable vegetable production. An enlarged page size and many more sparkling illustrations have been added to contribute to your interest and enjoyment.

We have added many new departments and features to bring to you all the information you need to overcome the problems of insect and disease control, variety selection, cultural and fertilizer methods, marketing, and others which the alert and successful grower must have at his finger tips.

A new name, AMERICAN VEGETABLE GROWER, has been selected to reflect the importance of the growing commercial vegetable industry and to serve as a united voice for the country's billion dollar vegetable industry. We feel there is a need for a national vegetable magazine—one that tends to draw the vegetable industry of the nation together and which presents the needs and problems of the industry as a whole. The United States is the leader in world vegetable production and the new title befits a publication representing this country's pre-eminent position.

AMERICAN VEGETABLE GROWER is a sister publication to AMERICAN FRUIT GROWER. It is published by the same farm publishing company which has produced for over 70 years AMERICAN FRUIT GROWER, the national magazine for the fruit industry.

AMERICAN VEGETABLE GROWER is edited by a group of men and women who, by education and experience, are trained to work with vegetable people. AMERICAN VEGETABLE GROWER is your magazine, and we hope you will send us your suggestions and ideas.

At the same time we will bring you practical authoritative stories and illustrations to help you increase your yields of high quality vegetables which bring a premium at the market place. We will keep you up-to-date on latest research findings, helpful experience stories from other growers faced with problems similar to yours, and up-to-date news from manufacturers and suppliers. Don't be surprised when an AMERICAN VEGETABLE GROWER editor stops around to see you. We want your ideas and practical experience to help continue the advance of a strong, progressive American vegetable industry.

It is the aim of AMERICAN VEGETABLE GROWER to speak fearlessly without bias on all questions affecting the welfare of the vegetable industry. We pledge ourselves to work unstintingly for your progress and for the advancement of the vegetable industry.

Spraying for WEED CONTROL

Here are down-to-earth suggestions about the new weed killers, best ways to apply them and a listing of methods available on specific crops

By L. L. DANIELSON
Virginia Truck Experiment Station

IT has been said that the advent of 2,4-D chemical weed killers has been the greatest boon to agriculture since the introduction of hybrid corn varieties. The validity of this statement may be disputed by some but it is clear that the extensive practical success of this chemical has stimulated a nationwide research program in which state and federal experiment stations in co-operation with industry are screening a large number of chemicals for weed-killing activity.

This screening program has already given us a number of chemicals which have been found to be of practical use in vegetable crop production. It is worthy of mention that the discovery of the weed killing power of these chemicals has coincided with the development of severe shortage of agricultural labor in some vegetable growing areas. As a result, certain vegetable crops are continued in production only because of the use of some of these chemicals. The problem is not one of hand weeding costs but one of scarcity of labor.

In view of this condition, it is apparent that a continuing and expanding research program on the use of chemical weed killers for vegetable crop production is a necessity. Grower support of this program is clear evidence that important practical results from this program have been demonstrated up to the present time.

A series of weed killing chemicals are now available for trial on vegetable crops. Choice of the right chemical for trial use will depend on the specific weed problem and the crop involved. In some cases several chemicals are available for control of the same weed problems in a crop and selection of the chemical will depend on convenience of use and price comparisons.

In certain weed problems excellent results may be obtained with a chemical but the cost of overall application is too high to be practical. This condition may be remedied and a practical cost level may be reached by using only a six- to eight-inch band application directly over the seed row.

First use of any chemical weed killing method should be on a small trial basis in order to avoid costly mistakes due to inexperience. The best plan to follow is to consult the local county agent to determine the previous results obtained with the vari-

before it comes up. Usually these applications are made before weeds are up and are therefore soil treatments. There are some exceptions to this where weeds emerge and are sprayed before the crop comes up.

The pre-emergence soil sprays present special problems due to the fact that the results are affected by soil type, climatic conditions, and uniformity of application. Light, sandy soils require lower rates of application than do heavy soils if crop injury is to be avoided. Soil moisture levels must be high enough for quick weed seed germination during the active period of the chemical. Great care must be used to apply the recommended amount of the chemical.

Post-emergence spray applications are those which are made after the crop has come up and depend on the selective character of the chemical and careful use of correct rates. The best



Parsley sprayed with Stoddard solvent oil shortly after emergence for control of grasses and certain broadleaf weeds. The area in center of field was not treated.

ous chemicals under local soil and climatic conditions. The necessity of using caution in the use of weed killing chemicals on vegetable crops cannot be over-emphasized.

In general, it is recommended that a sprayer to be used for weed killing be equipped with a 12- to 15-gallon per minute pump and a wide-range pressure regulator so that small or large volumes of solution per acre may be applied at a reasonably rapid pace. Fan-type nozzles usually give the most uniform spray coverage. Pressures of 50 pounds per square inch or less will usually give satisfactory results and spray drift will not be a problem.

Pre-emergence applications are those which are applied during the period after the crop is planted but

example of this is the use of 2,4-D weed killers for control of broadleaf weeds in growing corn.

Choice of pre- or post-emergence methods will depend on when the principal weed problem occurs in a crop.

The following brief listing of methods available for trial on vegetable crops is given as an indication of the wide range of possibilities in this field. Local agricultural authorities should be consulted for more specific information.

Sweet corn — Pre-emergence: 2,4-D, Sinox P.E., Dow Premerge, Crag Herbicide No. 1, or Aero Cyanamid. Post-emergence: 2,4-D, Dow Premerge, Sinox P.E., or Aero Cyanamid.

Snap beans and Lima beans — Pre-

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Weeds were nicely controlled in sweet corn shown in the photograph at left. A pre-emergence application was made by treating with 2,4-D chemical weed killer.

Photograph at right shows an untreated area of sweet corn taken at same time as photo above. Weed killers are cutting hand labor costs for many growers.



emergence: Sinox P.E., Dow Premerge, or 3-Chloro-IPC. Post-emergence: Directed Stoddard solvent sprays.

Irish potatoes — Pre-emergence: Dow Premerge, Sinox P.E., or Crag Herbicide No. 1. Post-emergence: Crag Herbicide No. 1.

Asparagus — Dormant period weeds: Soil treatment before weeds come up with Sinox P.E., Dow Premerge, IPC, 3-Chloro-IPC, Crag Herbicide No. 1, Pentachlorophenol, CMU, or Aero Cyanamid. Weeds during cutting season: Soil treatment about three weeks before asparagus comes up and before weeds are up with chemicals listed for dormant period. Weeds after cutting period: Crag Herbicide No. 1.

Onions — Pre-emergence: IPC or 3-Chloro-IPC. Post-emergence: Aero Cyanate.

Carrots and Parsley — Pre-emergence: Stoddard solvent on growing

weeds. Post-emergence: Stoddard solvent overall.

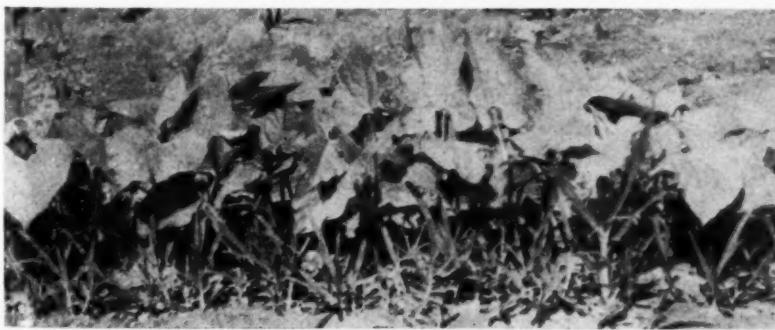
Vegetable Leaf Crops — (Spinach, kale, collards, Hanover salad greens, turnip greens, beets, upland cress, and cabbage grown for leaf harvest.) Pre-emergence: 3-Chloro-IPC immediately after planting during summer weather and IPC or one-half of summer rate of 3-Chloro-IPC applied immediately after planting in cool spring and fall weather.

Strawberries — New planting: Crag Herbicide No. 1 and/or 3-Chloro-IPC about 10 days after setting plants and twice more during growing season plus one application in fall before winter weeds come up. Old planting: Hand weed and treat as for new planting. A winter application of one of the dinitro compounds will not only give benefits in winter weed control but will also kill troublesome spider mites.

THE END



In the snap bean planting in photograph above weed control was obtained with a pre-emergence application of dinitro. Untreated area is shown in photo at left.



HOW TO GET BEST RESULTS FROM FERTILIZERS

Well fed crops produce top yields. Be sure to use the right ratio of plant food properly placed to give greatest benefit

By **MALCOLM H. MCVICKAR**

National Fertilizer Association

AMERICANS are the best fed people on the face of the earth. Much of the credit for this achievement goes to our commercial vegetable growers. Efficiency is the keynote in their operations. They have set a pattern for other producers to follow.

Vegetable growers appreciate that plants are living things and must be treated as such. They also know that to produce top yields, crops must be well fed from planting to harvest time. Likewise, they know that top-notch yields usually mean A-1 quality. Thus, every effort is made to supply crops with a balanced diet in ample amounts to promote rapid growth.

Today vegetable crops receive more commercial fertilizer than does cotton, that widely grown crop. This has not always been the case. Three surveys, two made by the National Fertilizer Association and the third by the USDA in 1947 and interpolated for 1950 by John F. Gale, economist for the National Fertilizer Association, furnish data on fertilizer consumption by crops for 1927, 1938, and 1950.

The average acre rate of fertilization on vegetables in 1927 was 371 pounds. This was a higher fertilization rate than on any other crop except tobacco which received 771 pounds per acre.

What changes were revealed by the 1938 survey? The results are startling. Actually the percentage of total fertilizer used on vegetables had declined from 5.3 per cent to 4.3 per cent. All vegetable crops received only 325,000 tons of fertilizer. Because of the decrease in tonnage and an increase in vegetable acreage, the rate of fertilization also declined to 207 pounds per acre. Two crops, cotton and tobacco, received more fertilizer than did vegetables. As far as total consumption of fertilizer was concerned, many of the farm crops exceeded vegetables. Corn, wheat, and fruit and nuts each received more fertilizer.

By 1950 things had changed. Vegetables were now the No. 2 users of commercial fertilizer. Corn, which had taken the lead away from cotton

by 1938, was now in the No. 1 position. In 1950, farmers used on vegetables 1,915,000 tons of fertilizer—six times the amount used in 1938. *The average acre devoted to vegetables received approximately 1,130 pounds of fertilizer.* This 1,130-pound-per-acre rate was just 10 times the average rate of corn fertilization in the United States.

You will note that the average yield declined in 1938, and also that the pounds of fertilizer used on vegetables was less in 1938 than in 1927. It is also evident that both yields and rate of fertilization have sky-rocketed since 1938. Conclusive evidence exists of a good positive correlation between acre yields and rates of fertilization. Naturally such factors as better varieties and better insect and disease control have also contributed to the increase, but no one will deny the important role played by commercial fertilizer in bringing about this increase.

There is a factor in addition to total acre yield, however, that is of major importance. It is quality. Generally speaking, yield and quality go up together. In fact, quality can usually be improved after maximum yield is obtained. Many good com-

mercial vegetable growers are using more than a ton of fertilizer per acre because they have found that it pays.

One more observation. All authorities agree that many commercial growers are not getting the most from the fertilizer they use. In some cases they don't use the right ratio of plant foods. In other instances they are not putting it where the crop can best utilize it. The greatest opportunity for increasing yields on the basis of present fertilization rates lies in proper fertilizer placement.

The best placement varies with the crop. Recommendations have been made by The National Joint Committee on Fertilizer Application, an organization with the following membership: The American Society of Agricultural Engineers, The American Society of Agronomy, The American Society for Horticultural Science, The Farm Equipment Institute, The National Canners Association and The National Fertilizer Association.

The recommendations made by the committee for vegetable crops are as follows:

Beans, Snap Beans—The fertilizer in amounts as high as 500 to 700

(Continued on page 27)



Raising fertilizer rate ups yield, quality. Photo shows cabbage being side dressed.

AMERICAN VEGETABLE GROWER



Brigham Yellow Globe onions photographed in April following storage showing how maleic hydrazide inhibited sprouting of onions at left. Onions at right untreated.

Overcoming the problem of SPROUTING

You can soon spray for sprout control. Preharvest applications of maleic hydrazide do the job for potatoes and onions.

By S. H. WITTWER
Michigan State College

WIDESPREAD use of maleic hydrazide for controlling sprouting in the storage of onions, potatoes, and other vegetables appears likely. Treatment consists of merely spraying the chemical on the green leaves before harvest. The crop must be approaching maturity, but the leaves yet green. Two to three pounds per acre of the actual chemical are usually sufficient for complete and permanent sprout inhibition.

While a number of other chemicals have been used with some success in arresting sprouting in potatoes, maleic hydrazide is the only substance yet found effective for onions. A further advantage is that it can be applied before harvest while the crop is still growing in the field. Such a method of application enables it to be absorbed and to be translocated to every living part, particularly significant with the onion where growing parts are buried deeply within layers of leaf bases.

Maleic hydrazide is an extremely potent growth control agent for

plants. Yet, when applied to the leaves of potatoes, onions, and other crops approaching maturity, yields are not affected and the inhibitory effects on growth are not observed until months later in storage. Residues of only a few parts per million (three to 15) have thus far been found. These residues appear to be far below possible toxic levels.

No evidence of undesirable influences on flavor, color, general appearance, or market acceptability in any of the treated produce has thus far been observed. Four years of experimental work, including a number of large-scale field tests, permit the following suggestions to vegetable growers using maleic hydrazide as a sprout inhibitor.

Onions.—Onions in storage sprout at temperatures above 40° F. and rooting is promoted by high relative humidities (above 70 per cent). Considerable weight loss and shrinkage may also be experienced. Maleic hydrazide will completely eliminate sprouting and root growth of onions

in storage and after removal from storage (of great significance to retailers and housewives) irrespective of temperatures and humidities usually encountered.

Treated onions in bulk storage have been carefully examined for diseases and rots and no increase, but rather a decrease, in breakdown is usually observed. Bulbs harvested from properly treated plants are completely dormant. If planted they produce neither tops nor roots.

Maleic hydrazide may alter some of the objectives of the National Onion Breeding Program. Recently much attention has been directed toward the development of hybrids with better storage quality. Most of the mildly flavored hybrids sprout readily and are poor keepers. Treatment with maleic hydrazide has significantly prolonged the storage life of the poorest keeping, yet in many instances highest yielding, hybrids. Marketing of standard varieties may be extended for several months with greater profit and satisfaction to not only the producer but the consumer.

For successful treatment of onions to arrest sprouting, the chemical is usually applied 10 days to three weeks before harvest. To be effective it must be absorbed by the green leaves and translocated to the growing tips inside the bulb. At time of treatment, bulbs must be near maturity, and the tops still green but beginning to fall. Hollow and puffy onions are produced if maleic hydrazide is applied before the bulbs have matured. Many growers have observed following treatment that drying of the tops is hastened and field curing facilitated.

As little as one pound per acre of maleic hydrazide has proven effective for inhibiting sprouting in onions. General recommendations, however, suggest a single spray treatment of two to three pounds per acre with a wetting agent added to facilitate coverage.

Although the chemical is apparently absorbed very rapidly by the leaves, weather conditions at the time of treating should be such that no heavy rains occur for a few hours.

Potatoes.—At storage temperatures above 40° to 45° potatoes tend to sprout profusely and below these temperatures sugars accumulate and an undesirable sweetening of the tubers occurs. As with onions, preharvest sprays of maleic hydrazide may totally arrest storage sprouting even at temperatures of 55° to 65° F. The dormancy induced is recommended exclusively for table stock and for potatoes which are to be processed.

Treated tubers, as compared with
(Continued on next page)

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Photographed in March, 1952, these Y-40 hybrid onions were treated with maleic hydrazide two weeks before harvest.



Onions above were not treated and were photographed following storage same time as onions in photo at the left.

(Continued from preceding page)
non-treated control samples, have slightly higher specific gravity readings after storage at various temperatures; and within specific gravity groupings, chipping quality has been judged superior.

All varieties of potatoes respond

Treated four weeks before harvest, potatoes show no sprouting after storage.



Potatoes which were not treated, showing sprouting in storage. Photo taken same time as picture at left.



Although final clearance has not yet been received it is expected that maleic hydrazide will be commercially available this season for use as a preharvest spray on onions and potatoes to prevent storage sprouting.

Maleic hydrazide will be offered as a sodium salt formulation containing a wetting agent and 40 per cent actual maleic hydrazide. It is a product of the United States Rubber Company, Naugatuck Chemical Division, Naugatuck, Conn., and will have the trade name of MH-40.

Five to seven pounds per acre of MH-40 would be a suggested spray dosage for onions and potatoes to arrest storage sprouting. At this rate cost would be under \$20 an acre.—Ed.

favorably to treatment if the chemical spray, at the rate of two to three pounds per acre, is applied to the growing crop four to six weeks before harvest. Very early applications, shortly after plant emergence, before and during early tuber formation, and before flowering may severely reduce yields and injure the vines and tubers of Irish Cobbler and Triumph. In some instances, the formation of numerous small tubers is promoted which readily sprout in storage.

While maleic hydrazide applied to maturing potato vines may completely inhibit sprouting of tubers, the oppo-

site effects may be obtained from applications early in the growing season. Potatoes properly treated have been held experimentally for 12 months at 55° F. and have shown no evidence of sprouting, root growth or breakdown, and in the end had fair eating quality.

While preharvest foliage sprays of maleic hydrazide will likely have their widest use for onions and potatoes, the chemical may also prove useful in the short time storage of sugar beets, carrots, beets, rutabagas, turnips, and parsnips. Research is continuing with these crops. THE END



Courtesy New York Agricultural Experiment Station

10 Rules for Protection When Spraying

SOME of the newer organic sprays such as parathion and TEPP are not only tough customers on bugs but will deal a knockout blow to the man behind the spray gun if he doesn't take precautions. The safety record of growers using these new highly toxic materials has been remarkably good, but constant vigilance is necessary to avoid accidents.

Continued use of such sprays with seemingly no ill effects often results in a careless attitude on the part of the user. Materials such as the organic phosphates affect the nervous system and are cumulative in effect. They can be absorbed by the human system in light concentrations for hours or even weeks before causing serious symptoms.

Therefore, when you are filling the spray tank, disposing of empty spray cartons, or whenever you are exposed to even small amounts of insecticide continuously during the day or for succeeding days, observe the following 10 rules for safe handling:

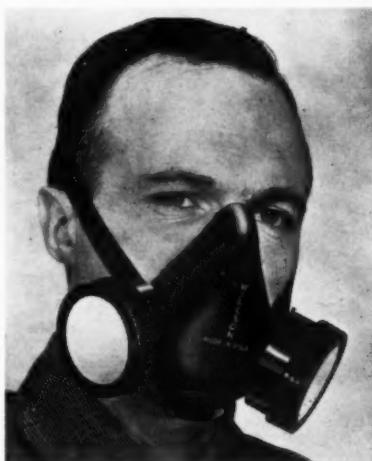
The Rules

1) Use a respirator with filters and cartridges especially designed for use against agricultural insecticides. Bear in mind that for HETP and TEPP a different type of filter and cartridge is necessary than the type recommended for parathion, EPN, aldrin, dieldrin, chlordane, and nicotine. Don't use a simple dust respirator which will give you a false feeling of security.

2) Change respirator filters twice

a day, or oftener should it become difficult to breathe.

3) Change respirator cartridges after eight hours of actual use, or oftener if any odor of insecticide is detected.



Above—Mine Safety Farm Spray respirator. Left—Willson Agrisol respirator. Both are equipped with two chemical cartridges and filters for use in light concentrations of most organic insecticides. Special filters are needed for HETP and TEPP.

4) After use, remove filters and cartridges and wash face piece with soap and warm water. Rinse thoroughly and dry face piece with clean cloth, uncontaminated with insecticide.

5) Remember that a cab or umbrella over the tractor operator will ward off spray drift but is not a substitute for a respirator or protective clothing.

6) Protect your eyes with goggles or face shields.

7) Wear genuine rubber gloves—not synthetic—of either the gauntlet or inverted cuff type. Wear wet weather garments of rubber. Boots should be of rubber since canvas and leather take up and hold many of the pesticides.

8) Arrange with your physician to have a supply of atropine on hand for emergency use as an antidote.

9) Follow a standard washing schedule after spraying. Wash hands, arms, and face immediately after finishing spraying. Change coveralls, socks, and underclothing each day.

10) For applying insecticides, including aerosols, in greenhouses or when formulating or mixing insecticides in poorly ventilated spaces, use a full-face gas mask with approved type canister.

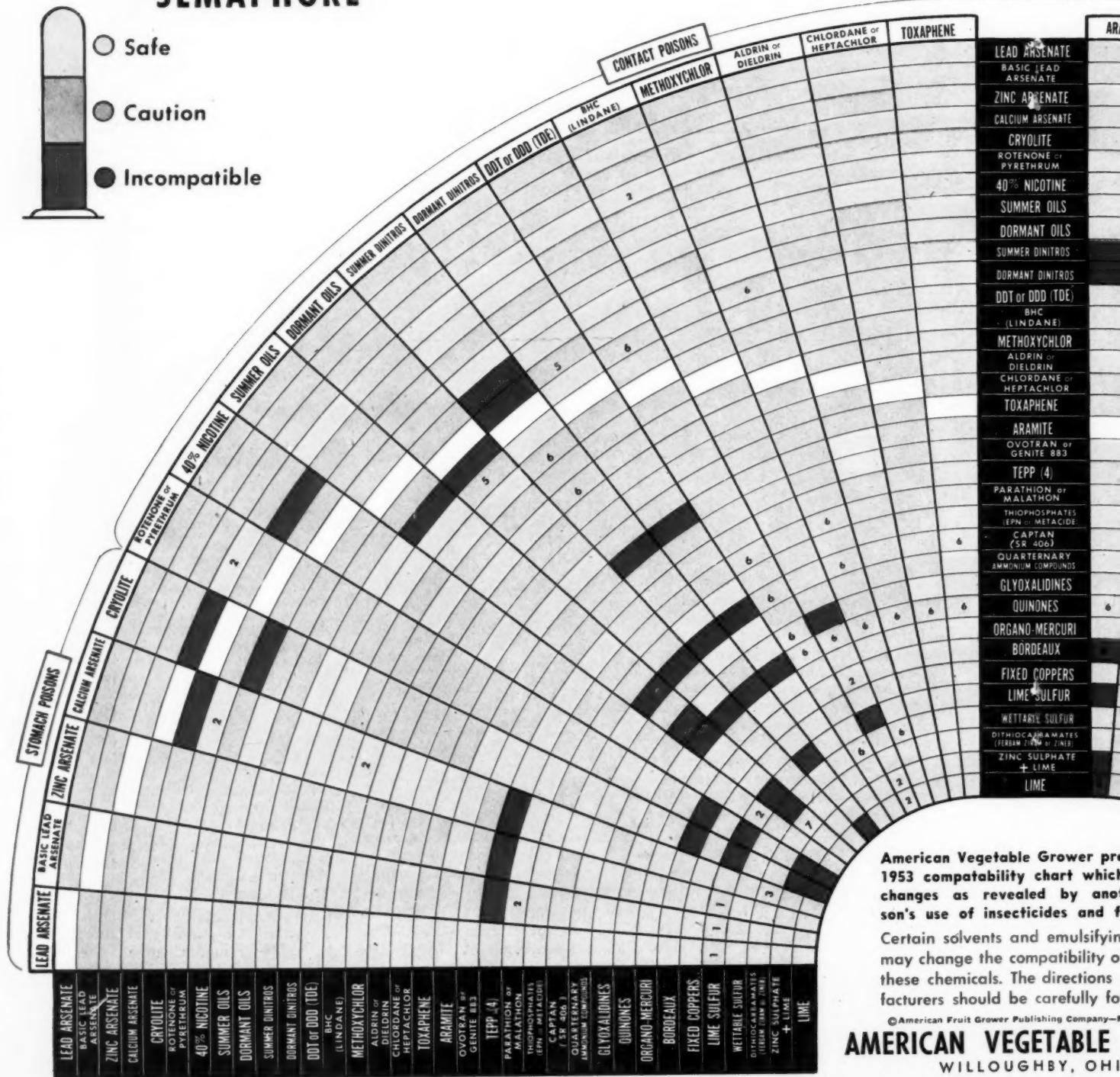
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COMPATIBILITY CHART AND FUNG

The SPRAY CONTROL SEMAPHORE



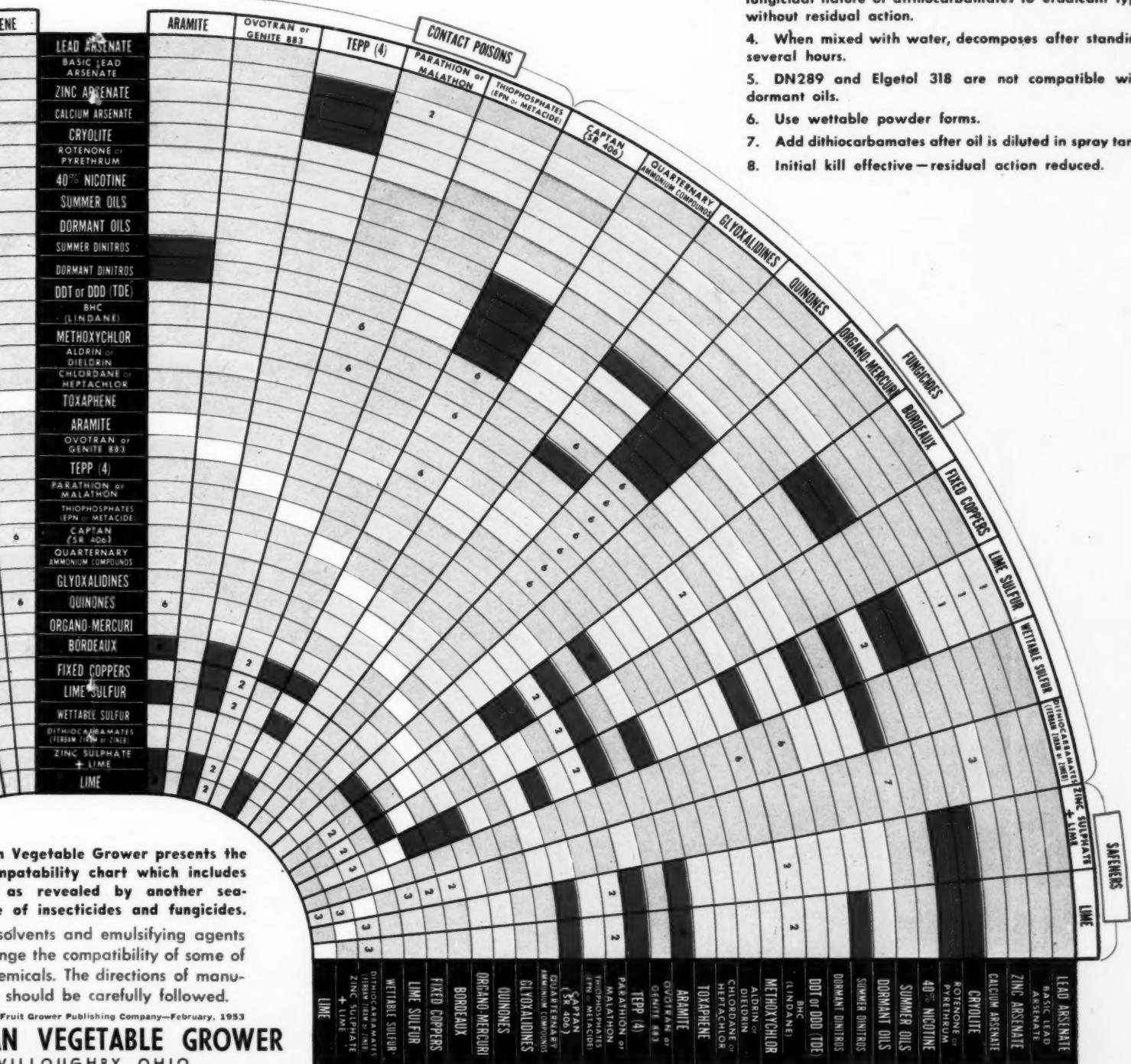
- Safe
- Caution
- Incompatible



American Vegetable Grower
1953 compatibility chart which
changes as revealed by another
son's use of insecticides and fungicides.
Certain solvents and emulsifying
agents may change the compatibility of
these chemicals. The directions
and manufacturers should be carefully followed.

© American Fruit Grower Publishing Company
AMERICAN VEGETABLE
WILLOUGHBY, OHIO

ART FOR INSECTICIDES UNGICIDES FOR 1953



The Vegetable Grower presents the compatibility chart which includes as revealed by another source of insecticides and fungicides. Solvents and emulsifying agents change the compatibility of some chemicals. The directions of manufacturers should be carefully followed.

Fruit Grower Publishing Company—February, 1953

IN VEGETABLE GROWER
WILLOUGHBY, OHIO

MAY, 1953

MARKET REPORT

• Potatoes and Onions

OFFICERS AND DIRECTORS OF THE NATIONAL POTATO COUNCIL are supporting Secretary of Agriculture Ezra Taft Benson in urging all potato growers substantially to reduce the remainder of this year's production.

Late in March Benson warned potato growers that they were planning to plant from "25 to 30 million bushels more than is needed to meet fully all national requirements for potatoes."

The NPC urged Benson to propagate such a warning to potato growers "through the widest possible publicity."

PRICES OF POTATOES at leading shipping points throughout the country continued to weaken during April. Demand was slow at the prevailing prices and trading was comparatively light. There were still quite a few potatoes in the Connecticut valley, and Long Island growers were having difficulty finding buyers for those that they had left. Pennsylvania and New York prices continued to decline; business was slow in Michigan and Wisconsin. Maine prices were the lowest in a long time with Katahdins down to \$1.80-1.85 and Green Mountains \$1.55-1.65. Even at these prices there was little interest in buying. Some growers could easily have received twice as much last fall.

Of the major producing states, Idaho seemed to be working out of the last month's dilemma in the best manner. Prices there held fairly stable and were high in relation to the rest of the country. The quantities remaining in Idaho were moderate and probably totaled about 10,000 cars.

THE USDA HAS ISSUED ITS ESTIMATE of production and preliminary acreage as of April 1 in early and late spring states respectively. Heavy rains in Florida since that date have tended to retard the harvesting of the Hastings crop. Some of the early dug potatoes are showing up in terminal markets in not too good a condition. The trade is watching closely the supplies now being received to see if any damage has been caused by the heavy rainfall. We have recapitulated below the government crop report:

STATE	Indicated Production	
	Early Spring Group States	1952
Florida		1953
Hastings	4,988	5,742
Other	4,340	4,750
Texas	648	992
Group Total	128	63
Group Total	5,116	5,805
STATE	Preliminary Acreage	
	Late Spring Group States	1952
California		1953
Alabama	60,000	82,000
South Carolina	21,200	31,800
North Carolina	8,000	8,500
Others	17,000	20,000
Group Total	16,650	20,400
Group Total	122,850	162,700

DIGEST OF THE POTATO SITUATION issued by the USDA in late April shows that potato prices during the first quarter of 1953 were considerably lower than a year earlier. The stocks of old crop potatoes on January 1st were a fifth larger than the unusually low stocks a year earlier, although shipment of late crop 1952 potatoes up to January 1st were substantially larger than those of a year earlier. Rail shipments of new crop potatoes through the first week in March remained below those of a year earlier but forged ahead of last year in the latter part of March and by mid-April were 50 per cent

larger than the comparable movement of a year earlier. Production and acreage thus far indicated for early commercial potatoes this year are considerably above those of 1952. Retail prices have been somewhat slow in reflecting lower farm prices, but have fallen in recent weeks.

Civilian per capita consumption of potatoes is estimated to have been nearly constant the last two or three years at a little over 100 pounds. If potatoes continue plentiful at reduced prices, there might be a temporary rise in per capita consumption.

ONION SHIPPERS OF SOUTH TEXAS believe one of the factors that have contributed to the "run-away" panic which has plagued the onion industry since shortly after the opening of the shipping season is that too many cars of onions were rolled unsold. In an effort to stabilize the market and restore confidence in all quarters, meetings of growers and shippers were called in Harlingen and Laredo the first week in April.

The outgrowth of these meetings was the declaration of a harvesting holiday until Tuesday of the following week, and the restriction of all shipments to bona fide sales or confirmed joint accounts.

Onion shipments to the first week of April, while heavier than normal, were not excessive. The combined total for all producing districts of South Texas was only 1,116.

Under prevailing low prices and slow demand, growers are far from optimistic. Several growers indicated they would abandon their fields rather than pile up additional expense in harvesting and packing costs.

All sections still have a lot of onions to be harvested, but unless there is a decided upward trend in the market, it is a foregone conclusion several hundred cars of fine onions either will be left in the fields or disked up.

PRESSURE OF HEAVY IMPORTATIONS of new crop Texas onions in mid-April caused western Oregon old crop stocks to show a price decline of 25 to 50 cents per 50-pound bag. Dealers quoted Texas yellow varieties, No. 1 grade and 2-inch minimum, to retailers at \$3.25 @ 3.50 while Texas whites were selling mostly at \$4.50 @ 5.

Western Oregon onions were being quoted as low as \$2.75 @ 3.

WITH TEXAS AND CHILE ONIONS rolling into the Montreal market in the last week in increasing volume, the market on local and Ontario Yellows and Reds dropped sharply in mid-April, the Canadian government reported.

THE RECENT FLOOD OF CHILEAN ONIONS arriving in this country—SS Santa Cecilia docking in New York in March with 16,160 cases aboard—has aroused a storm of protest from Texas growers, who had visions of marketing their best onion crop in 10 years. Cargoes scheduled to arrive during April totaled 504,260 crates, or approximately 840 cars, to compete with an estimated 5,000 cars which were about ready for harvest in Texas.

"There was a brisk demand for Texas onions before the Santa Cecilia arrived," said Austin Anson, executive director of the Texas Citrus and Vegetable Growers and Shippers, "but the market was depressed by this first arrival of Chilean onions. The fact that ten other ships are due to arrive has changed the feeling about the one bright spot in the Texas vegetable scene."

Mr. Anson said his organization is "moving heaven and earth" to obtain enactment of the special "dump duty," equivalent to 40c a crate, which the Secretary of the Treasury is empowered to assess on any imported products that depress the market for American agricultural products.

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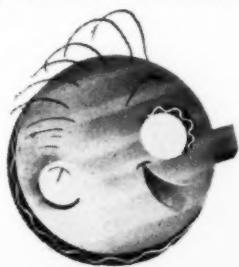
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IRRIGATED SOILS: THEIR FERTILITY AND MANAGEMENT by D. W. Thorne and H. B. Petersen. A well illustrated book which covers such topics as evaluating land for irrigation, irrigation practices for various crops, and drainage in its 288 pages. \$5.00

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PRINCIPLES OF WEED CONTROL by Gilbert H. Ahlgren, Glenn C. Klingman, and Dale E. Wolf. Gives practical answers to basic problems of weed control and discusses chemicals used. The book contains 368 pages and is well illustrated. \$5.50

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Soil Testing May Save You Money

By ELDON S. BANTA

TESTING your soil for amounts of available phosphorus and potash may save you money on fertilizer. There is a chance that, if you have been fertilizing heavily for a number of years, you can greatly reduce these two elements in your fertilizer program for three or four years.

Some recent data accumulated at the Washington County Truck Crops Experiment Farm, Marietta, Ohio, indicate this possibility. Crops grown under the test program included sweet corn, cucumbers, tomatoes, and cabbage. Certain plots which, previous to 1950, had been fertilized heavily with phosphorus and potash, have since that year received neither of these elements, only applications of nitrogen.

Other plots still received all three elements in the same quantities as before. The unexpected result has been that the plots receiving nitrogen only have produced just as high yields as those receiving the complete fertilizer program. The heavy applications of phosphorus and potash prior to 1950 built up an apparent reserve of these elements which will last for a few years under continuous vegetable cropping.

Similar results have been found at other experiment stations and these late figures from Ohio add more emphasis to the soil testing procedure on vegetable farms.

Soils on the southeastern Ohio Experiment Farm vary from a loam to a fine sandy loam. Originally they were acid. Drainage is good.

Considerable emphasis is placed on the level of available phosphorus in the soil. After 32 years of testing various fertilizer application rates, the Ohio station is ready to make definite recommendations concerning this element and use on the four crops mentioned. The recommendations are as follows:

Soils showing an available phosphorus supply of 200 pounds or more per acre have enough to produce maximum yields of the vegetable crops studied. Additions made in annual fertilizer applications are unnecessary.

Soils showing a phosphorus level near the 200-pound mark may profitably receive a "maintenance application" of 30 to 40 pounds of phosphoric acid per acre per year.

Knowing what elements crops remove from the soil each year helps



Dr. John Bushnel, vegetable crop specialist, stands beside sweet corn plot at Washington County Experiment Farm which for three years has received only nitrogen applications. Yields are equal to plots receiving complete fertilizer

to determine the fertilizer program. If you know how much of each element is in your soil and how much the crop you are growing removes from it, you can easily find the difference, and that is roughly what you must add to the soil.

The accompanying table shows how much of each element is contained in the crop when harvested.

NUTRIENTS CONTAINED IN HARVESTED CROP

Crop	Lbs. per Acre	Nitro-Phos	Pot-phorus	Ash
Cabbage, heads	33,000	150	20	140
Tomatoes, fruit	15,000	30	10	44
Cucumber, fruit	24,000	30	15	30
Sweet corn, ears	10,000	35	6	20
Stover	10,000	30	7	38

Another interesting fact coming from the Washington County Truck Farm is that with applications of eight tons of good manure per acre, the only fertilizer element really needed is nitrogen. Manure applications at this rate have maintained the phosphorus and potash levels in the soil at satisfactory amounts.

Soil testing of land not amply supplied with phosphorus and potash can save money for the grower, too. He then knows how much he has to add to grow the maximum crop yields. Money spent for fertilizer under these circumstances is really an investment, and one that pays a high rate of interest.

THE END

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BHC Dusts	Parathion Wettable Powder 15%
Black Leaf 40	Parathion Wettable Powder 25%
Black Leaf 253	Parathion Emulsifiable 25%
Chlordane Wettable Powder 40%	Parathion Emulsifiable 45%
Chlordane Emulsifiable 45%	Parathion Dusts
Chlordane Emulsifiable 72%	"Parzate" Liquid
Chlordane Dusts	Nabam Fungicide
Copper Dusts	"Parzate" Zineb Fungicide
DDT Emulsifiable 25%	"Pygon" Wettable Powder 50%
DDT Wettable Powder 50%	Rotenone Wettable Powder 5%
DDT Dusts	Rotenone Dusts
TEPP 40%	TDE Wettable Powder 50%
TEPP 20%	TDE Dusts
Ferbam Wettable Powder 76%	Ziram Fungicide

Write for full information about the above products

ALL THROUGH the growing season, reliable, dependable Black Leaf pest control products are your best answer to insect and disease problems.

Two generations ago, Black Leaf 40® was the only product which carried the Black Leaf trade-mark. Today, Black Leaf is an entire family of high quality insecticides, fungicides and other pest control products.

Black Leaf sprays mix easily with water for efficient, economical use. They contain stable materials which do not break down or separate. Black Leaf dusts are the right particle size for effective coverage.

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USE V-C FERTILIZER TO GROW BIGGER YIELDS OF BETTER QUALITY TRUCK CROPS

A HELP FOR IRRIGATION

CAN you tell when to irrigate potatoes? Last year a new type of soil moisture instrument, called a tensiometer, was used at the Washington County Experiment Farm at Marietta, Ohio, to determine the necessity of irrigating potatoes.

The instrument consists of a porcelain porous cup attached to one end of an aluminum tube and a special brass cased vacuum gauge. Various lengths of tube can be had for different levels of soil moisture so that it can be used for any type of vegetable or fruit crop.

The porous cup is forced into the soil to the depth at which the water level is to be maintained, usually into the upper limit of the root zone. In row crops, as potatoes, the tube should be inserted in the row as shown in the photograph. Irrigation should begin generally when the gauge reads between 35 and 50. The time, however, will be determined by the nature of the soil, type of crop and experience of the user after becoming acquainted with the instrument.

At the Washington County Experiment Farm last year a yield of 618 bushels of potatoes was taken from plots where the tensiometer was used

to hold the soil water table at a three foot depth. When this level was maintained it required about two waterings a week. To hold the water level at the one foot depth requires watering every day providing no rains occur.



New type soil moisture tensiometer in use in potato field, Marietta, Ohio. By reading gauge grower can tell when to irrigate.

The tensiometer received its name because of the fact that the walls in the porous cup permit free passage of water so the gauge will indicate the pressure in the soil water. When the soil is very wet and the pore spaces are filled, the pressure is nearly the same as that of the atmosphere and the gauge reading approximates zero. As the water is removed by the plant and the soil dries, a vacuum pressure is registered on the gauge and the water is said to be under tension. Thus the name "Tensiometer".

It gives precise and useful information on the status of the available soil water at any given horizon of the root zone throughout a range extending from the condition of saturation to that resulting from the withdrawal of the major part of the soil water. It is not greatly influenced by differences in soil or atmospheric temperatures or in the salinity of the soil solution.

Readings on the Tensiometer gauge from 20 to 50 generally speaking indicate medium moisture, above 70 the soil moisture is nearing the wilting point and at 75 most of the soil water in the zone where the cup is placed is exhausted. The Irrigation Engineering Company, 4067 7th Street, Riverside, Calif., will send additional information.

THE END

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sprayer

- 40' boom adjusts up to 8 feet
- 25 acres an hour
- 200 gallon tank
- 400 P.S.I.—10 G.P.M.

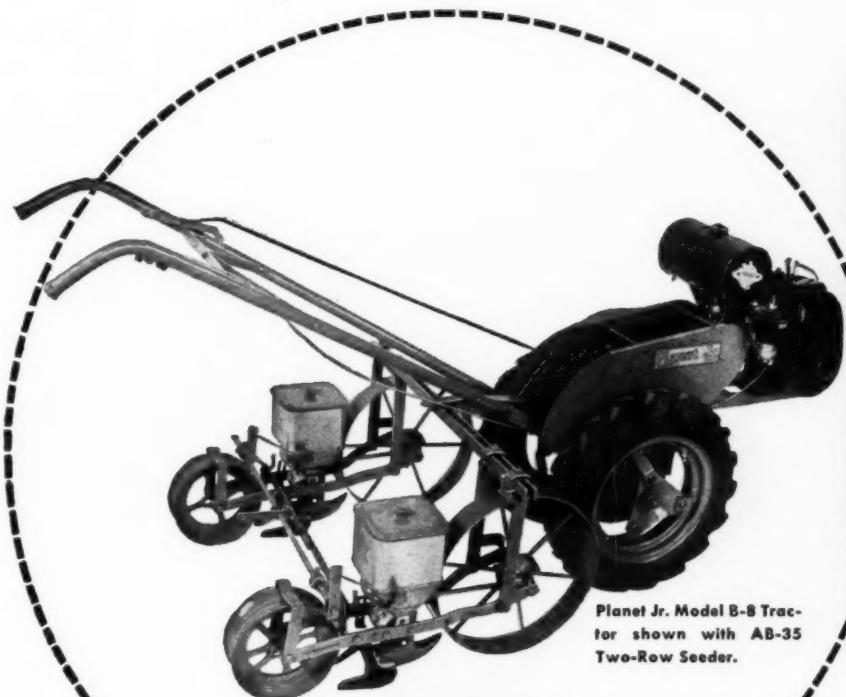
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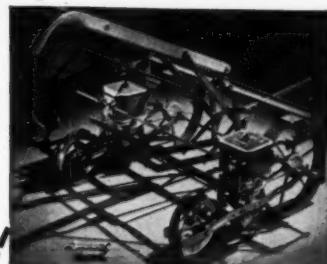
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Planet Jr. Model B-8 Trac-
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Two-Row Seeder.



300A Single Row Hand Seeder



157A 2-row Horse Drawn Seeder



Planet Jr. Seeders for general
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Saves Time, Labor, and Seed for Market Growers...

You can do a better, faster, more accurate job of planting almost any seed, from the finest of grass to small limas, with a Planet Jr. Seeder.

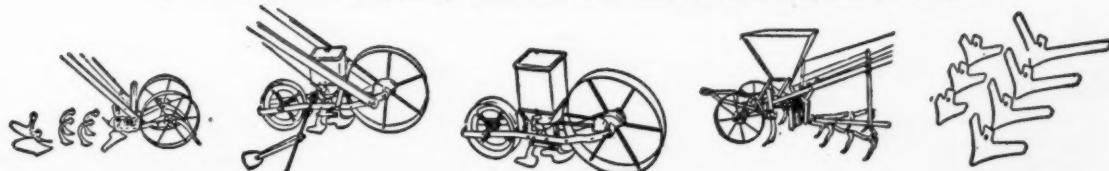
Planet Jr. Seeders are designed for market growers. They place the right amount of seed at the right depth . . . give straighter rows that save you time in cultivating the crop.

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Cultivating equipment is designed with the market grower in mind. The Planet Jr. line includes Tractors and Tractor Attachments . . . all kinds of Hand Seeders, Hand Cultivators, and Hand Fertilizer Distributors . . . Horse Drawn Seeders, Fertilizers, Cultivators . . . Planting, Fertilizing, and Cultivating equipment for general purpose four-wheel tractors . . . and an important assortment of Planetized* Tillage Steels.

*Trade Mark

S. L. ALLEN & CO., Inc., 3481 N. 5th Street, Philadelphia 40, Pa.



CALIBRATE YOUR SPRAYER

IT is important to calibrate your farm weed sprayer carefully before spraying for either weed or insect control, points out John E. Baylor, extension crops specialist at Rutgers University.

Knowing exactly how much material to put on not only may save money, but it may save crop losses due to over-dosages, particularly with weed killing materials.

You can check your sprayer with a calibration jar designed for this purpose and secured through your local equipment dealer, or you can

use the following quick and accurate method:

- 1) Fill the spray tank, making sure it's completely full.
- 2) Drive in a straight line for exactly 40 rods, operating the sprayer at exactly the same pressure and speed you plan to use in the field.
- 3) When you pass the 40 rod mark, shut off the boom. Then accurately and carefully re-fill the tank, using a quart jar.
- 4) Change the number of quarts of spray used into gallons and multiply by 66. Divide this figure by the

width of the strip sprayed, in feet.

The answer is the number of gallons per acre your sprayer will put on when it is operated at these settings. And once you know how many gallons per acre your sprayer is putting on, it's a simple matter to add the right amount of weed killing chemical to give you this quantity of solution per acre.

CHILLING OF TOMATOES

IDEAL temperatures for shipping tomatoes are between 50 and 65 degrees F. according to W. T. Pentzer and L. P. McColloch, plant scientists of the USDA. They base this information on extensive laboratory tests and studies of cross-country shipments from tomato fields in Texas, California, and Florida.

The scientists found that tomatoes are damaged by low temperatures that would be suitable for many other fruits and vegetables. Chilling injury causes losses in tomatoes held at 32° F. for six days or 40° F. for nine days. It becomes more serious with longer exposure, showing up in slow ripening, poor flavor, pale or mottled color, and the development of alternaria rot.

The longer the fruit is kept at low temperatures the greater becomes the danger of loss. Although it may look to be in good condition when taken from the car, seriously chilled fruit begins to rot after two or three days in the ripening room at 60 to 70 degrees.

The new evidence narrows the range of temperatures recommended for shipping and ripening tomatoes since temperatures above 70° F. retard ripening and favor the development of certain types of decay. The plant scientists recommend, therefore, that shippers use just enough ice to keep the temperature as consistently in the 50 to 65-degree bracket as possible.

SEEDLESS TOMATOES

TAMED with amino acids, 2,4-D has produced a seedless greenhouse tomato. The new compound is still just a laboratory chemical, explain plant physiologists Paul Marth and J. W. Mitchell of the USDA. But results so far suggest that this fundamental research on plant growth regulators may pay off early with a practical by-product.

Spraying greenhouse plants and their blooms with the modified 2,4-D caused the seedless tomatoes to develop without pollination. In fact, fruit set was much greater than on hand-pollinated plants.

Marth and Mitchell plan to make field tests with the new compound.



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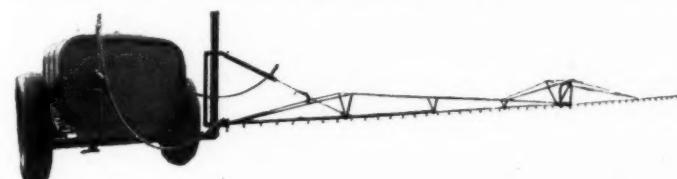
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Complete pest control and adequate irrigation open the door to more profit for the grower. Hardie equipment makes possible low cost production of big volume high quality crops.

Advanced labor saving convenience, economy of material and long life of trouble-free operation are designed and built into every Hardie. Ask your dealer. Write for catalog data.

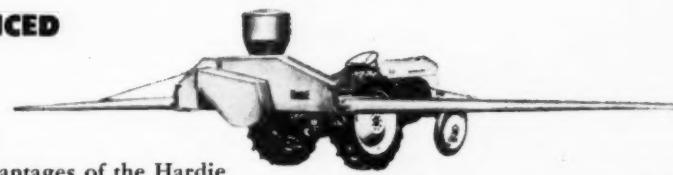


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Hardie Model No. 161-WCERT engine equipped trailer concentrate row crop sprayer provides low gallonage, low pressure, light weight. Equipped with air-cooled engine, 8 row boom. Gives big savings in water, spray material, labor and time.

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No other duster ever built gives the priceless advantages of the Hardie Top Feed Hopper and the Hardie Tapered Tubular Steel Boom, features of the Hardie Row Crop Duster. The hopper gives accurate metering under all



Tractor-seat hydraulic controls. Adjustable ground clearance. Fits any contour. 36 feet long. With nozzles for between-wheel spraying covers up to 42 feet.



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wear and corrosion. Only Rain Control provides a coupler with adequate foot support, positive lock, two-bolt ring clamp to hold steel hook that eliminates slippage and pipe damage, no-blowout gaskets automatically drain when pressure is off, two-bolt foot clamp provides attachment to pipe without drilling, punching or welding. Can be coupled or uncoupled from middle of pipe. Fits any ground. Readily adapted to any acreage.

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Please send Rain Control Catalog
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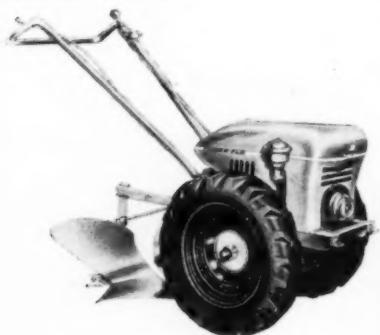
—to increase your profits

Be Safe



Many of the new organic chemicals are extremely toxic and have even caused death to growers who were not wearing proper protection. A very good respirator is made by the Mine Safety Appliances Company. The MSA farm respirator has been approved by the Government for use with Systox, HETP, TEPP, and other phosphate and phosphoride insecticides. Why not write George L. Seth, Industrial Dept., Mine Safety Appliances Company, Braddock, Thomas & Meade, Pittsburgh 8, Pa., for their new booklet on respirators?

Looks Good



The other day we saw the new Bready garden tractor in an actual vegetable planting. This new tractor uses an automatic torque converter called Power-Flo. This converter allows infinitely variable speeds forward and reverse, free wheeling, and easy operation. Other new features are a one-piece handlebar which affords easier handling, a new streamlined hood which protects the motor from dirt, and a conveniently located

power take-off. The new Bready is powered by a three and one-half h.p. Kohler four-cycle air-cooled engine. Write E. K. Loverud, The Bready Tractor & Implement Company, 10802 N. Aurora Rd., Solon, Ohio.

Don't Guess



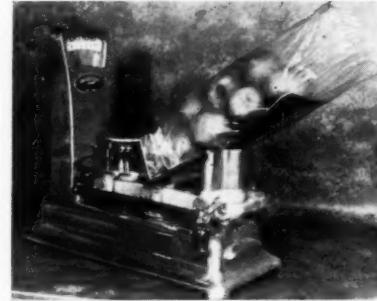
The first step in proper control of vegetable insects and diseases is to correctly identify the pest. Every vegetable grower should have a magnifying glass, and the new Bausch and Lomb Hastings triplet magnifier can be the cheapest investment you have made to protect your crop. You can order direct from Jack Brandt, Bausch & Lomb Optical Co., 510-16, Bausch St., Rochester 2, N.Y.

Lift Profits



Many vegetable growers have purchased lift trucks and have found them a quick and efficient way to lower costs. The new Towmotor with a special "NoSpin" differential is designed to give full power to both drive wheels under any operating conditions. Why not write Al Roth, Towmotor Corporation, 1226 E. 152nd St., Cleveland 10, Ohio?

Be Right



Last summer a grower told me of the money he had lost because his scale was not accurate. A good scale is not expensive and quickly pays for itself. I would like to recommend the "Quick-Stop" Exact Weight Scale. If you will write K. B. Neff, The Exact Weight Scale Co., 944 W. Fifth Ave., Columbus 8, Ohio, he will be delighted to send you full particulars.

A Winner



Recently a grower in New Jersey told us about the wonderful results he has had with the new Red Top beet. This new variety features a top of from 12 to 14 inches which is suitable for mechanical harvesting. It grows well in muck, peat, or high nitrogen soils. Seed can be obtained from R. D. Coursen, Northrup, King & Company, Dept. CVG, Minneapolis 13, Minn. You might also ask for information about this company's other seven new varieties of vegetables.

FERTILIZER RESULTS

(Continued from page 12)

pounds per acre should be applied in bands 2 to 3 inches to the side and 1 to 2 inches below the level of the seed. Where larger amounts are needed, the additional fertilizer may be broadcast and plowed under when the land is being prepared or, under some conditions, it may be applied as side dressing.

Lima Beans—The fertilizer should be placed in bands 2 to 3 inches to the side and 1 to 2 inches below the level of the seed. When the rate exceeds 500 pounds per acre, broadcasting and plowing under the additional quantity is recommended in some areas.

Carrots, Broccoli, Brussels Sprouts, and Cauliflower—With heavy applica-

approximately 2 inches deeper than the seed. Generally, quantities used in bands should not exceed 500 to 600 pounds per acre. In areas where larger quantities are required, the amount in excess of the normal row application may be broadcast and plowed under or applied with grain drill equipment. When supplemental nitrogen or nitrogen-potash mixture is needed, it should be applied carefully in the middles as a side dressing not in excess of 200 pounds per acre per application. Contact with the plant should be avoided.

Kale and Salad Greens—The fertilizer should be placed in bands 2 to 4 inches to each side and 2 to 3 inches below the seed level. Plowing under fertilizer is recommended for kale in some areas.

Lettuce—A part of the fertilizer should be broadcast and either disked in or plowed under and the remainder side-placed in bands or applied later as a side dressing. Under conditions such as those in Arizona and California, all fertilizer should be applied in bands approximately 4 inches deep and 2 inches from the plant row.

Onions—On muck, the fertilizer should be placed 2 inches directly under the seed.

Peas—For peas grown in rows 6 to 8 inches apart and receiving from

100 to 600 pounds of fertilizer per acre the fertilizer should be applied in a band $\frac{1}{2}$ to $1\frac{1}{2}$ inches to one side of the row and 1 inch below seed level.

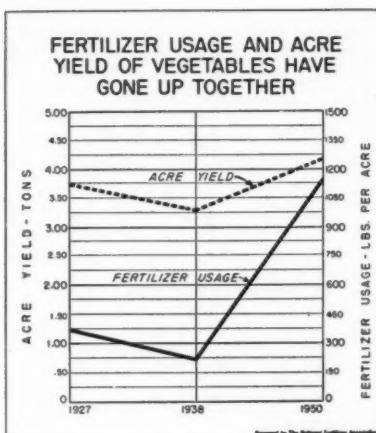
The next best method is to drill the fertilizer in deeply with the attachment on a fertilizer-grain drill or similar equipment in a separate operation before planting the seed.

Root Crops—Placing the fertilizer in bands 1 to 2 inches to the side and 2 to 3 inches deeper than the seed is preferred for row applications. Other methods of application recommended include broadcasting the fertilizer and plowing it under, and broadcasting and working it into the soil. Fertilizer should not be permitted to come into contact with the seed.

Spinach—The fertilizer should be applied in bands approximately 2 inches to the side and 2 to 3 inches deeper than the seed. Supplemental nitrogen, where needed, should be applied as a side dressing.

Sweet Corn—Best results from fertilization of sweet corn are generally obtained from fertilizer placed in continuous bands $1\frac{1}{2}$ to 2 inches to the side of and slightly below the level of the seed. Row fertilizer may be hill-dropped with the split-boot depositor on the usual corn planter

(Continued on page 28)



tions of a high-analysis fertilizer approximately two-thirds should be broadcast and plowed under on the heavier soils or broadcast and harrowed in after plowing on the lighter soils. The remainder should be placed in bands 2 to $2\frac{1}{2}$ inches to each side of the row approximately 3 inches deep at planting time. When comparatively light applications of fertilizer are made, the most efficient method of application is in side bands at planting time. Under some conditions, supplemental nitrogen is applied as side dressing.

Celery—One-half to two-thirds of the fertilizer is usually broadcast and plowed under or broadcast and disked deeply into the soil after plowing. The remainder may be placed in a band at each side of the row at time of setting the plants or applied as one or more side dressings in bands along the row.

Cantaloupes, Cucumbers, Melons, Squash, and Pumpkins—The fertilizer should be placed in a band 2 to 3 inches to each side of the row and

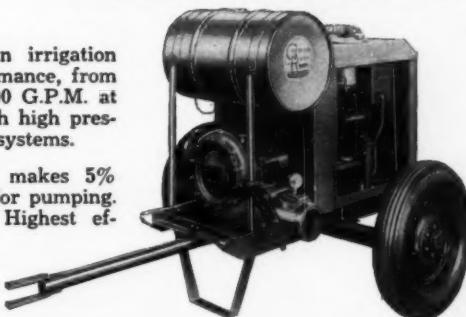
GORMAN-RUPP IRRIGATION PUMP and "JEEP" ENGINE make BIG NEWS!



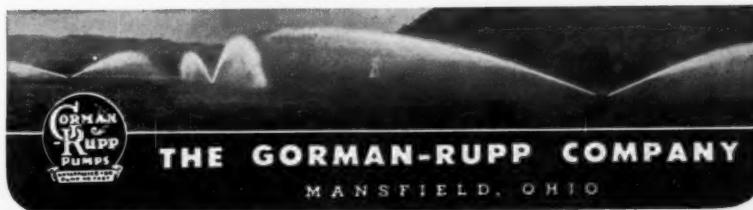
The "Jeep" engine driven irrigation pump gives excellent performance, from 250 G.P.M. at 120 lbs. to 600 G.P.M. at 55 lbs. pressure. Serves both high pressure and medium pressure systems.

Heat exchanger cooling makes 5% more engine H.P. available for pumping. Lowest cost of operation. Highest efficiency and dependability.

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WOODEN BARRELS, NEW OR USED, ALL SIZES, For cider, vinegar, fruits. We ship anywhere. MASLOW COOPERAGE CORP., 16 Court St., Brooklyn 1, N.Y.

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SPRAYS HI-PRESSURE 500 GALLON MEYERS 50 GPM Wisconsin air-cooled motor, 4-wheel model on rubber. 300 Gallon HARDIE 30 GPM, 4 cylinder Leroy motor, 4-wheel model on rubber. Grader for apple & peaches. NIAGARA made with brusher and motor; 100 to 200 30 h.p. MOUNT GILEAD (fruit press, 10" ram, 42" racks, 30 h.p. size with 10" ram), grader, hydraulic pump, etc. complete. C. E. OPPERMAN, Birmingham, Ohio.

FOR SALE: GALLON CLEAR GLASS JUGS IN CARTONS. N. C. JOHNSTON, Columbia City, Indiana.

FIELD CRATES—HARDWOOD OR SOFTWOOD. Order now and be sure of your supply for the good season ahead. Kenova crates are good crates. Complete description sent on request. KENOVA BOX CO., Kenova, W. Va.

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FOR SALE: A-1 CONDITION, GRADING AND CLEANING equipment, for fruits or vegetables. Complete with conveyor belts, packing table, motors. Big discount for quick sale. CINCINNATI PRODUCE GROWERS ASSN., 11 W. Water St., Cincinnati, Ohio.

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LANDSCAPING AND/OR TREE SURGERY BUSINESS with or without equipment. TREE SERVICE, Box 705, S. Norwalk 17, Conn. A goldmine for a live wire.

ORCHARD AND BUSINESS, 144 ACRES 32 MILES WEST OF Wilkes-Barre, 5000 apple, 1000 peach trees, 8 room house just remodeled. Metal shed. CATERPILLAR D4 tractor with machinery for operating orchard. Machine shop operating a thriving apple slicing business, locker plant, trucks, cider press, etc. \$40,000 cash. CLETTA HISCOX, R.D. #1, Benton, Penna.

FOR SALE: 18 1/2-ACRE APPLE ORCHARD, 1400 trees, modern home, storage and equipment, near Baraboo, Wis. JOHN R. LEATHERMAN, Realtor, Baraboo, Wis.

FOWL

PEAFOWL, SWANS, PHEASANTS, GUINEAS, BANTAMS, ducks, geese, 30 varieties pigeons. JOHN HASS, Bettendorf, Iowa.

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PROFIT OPPORTUNITY FOR PROGRESSIVE SALES CALLING. For more info. "Nutri-Plant Liquid Fertilizer," the popular priced liquid fertilizer that is fast being accepted for transplanting and spraying. Write ZIRCON PRODUCTS CO., INC. B, 2051 N. Rural St., Indianapolis, Ind.

MAN FOR ORCHARD, EASTERN PENNA. GOOD house and wages. Write experience, age, family status, wages expected. BALDERSTON, Glen Mills, Penna.

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SWEET POTATO PLANTS, NANCY HALLS, PORTO Ricans. Quick shipments. Carefully packed. Planting guide free. 200, \$1.50; 500, \$2.50; 1,000, \$4.00. TAYLOR PLANT CO., Gleason, Tenn.

WANTED TO BUY

WANTED—GASOLINE ENGINE—flywheel type—J. H. AYER, Plainville, Ohio.

FERTILIZER RESULTS

(Continued from page 27)

which side-places it $\frac{1}{2}$ to 1 inch from the seed, but to guard against injury with this hill placement, the rate should not exceed 300 pounds per acre.

In areas where side dressings are effective, one or two side dressings of nitrogen-potash mixtures, in addition to the hill or row application, have been found to be profitable.

Tomatoes—On heavy soils: The fertilizer in amounts of 300 to 500 pounds per acre should be placed in a band 3 to 4 inches to each side of the row and 4 inches below the soil surface, either at the time the plants are set or at first cultivation. For rates heavier than 500 pounds per acre, the balance of the fertilizer should be broadcast and plowed under when the land is being prepared. A starter solution should be used.

New advances being made by our state and federal experiment stations and by private industry, coupled with the rapid acceptance of these techniques by commercial vegetable growers, will make it possible for our people to eat better and better with each passing day.

THE END

COMING MEETINGS

May 17-21—American Warehousemen's Association and National Association of Refrigerated Warehouses, Hotel Shoreham, Washington, D.C. Association headquarters: Tower Bldg., Washington 5, D.C.

June 11-13—Idaho Shippers Association (including Malheur County, Oregon) annual summer meeting, Sun Valley, Idaho. Association headquarters: P.O. Box 1100, Edd Moore, Sec'y-Mgr., Idaho Falls, Idaho.

Aug. 12-14—Ohio Pesticide Institute annual tour. Originates at Ohio Agricultural Experiment Station, Wooster, and ends at Northwest Test Farm, Hoytville. —J. D. Wilson, Sec'y, Wooster.

Sept. 23-25—Florida Fruit and Vegetable Association annual meeting, Casablanca Hotel, Miami Beach. Association headquarters: 4401 East Colonial Drive, Orlando, Fla.

Oct. 4-10—Produce Prepackaging Association 3rd annual conference and exposition, Chase Hotel, St. Louis, Mo. Association headquarters: 1250 East Main St., Stamford, Conn.

Oct. 5-7—Texas Citrus and Vegetable Growers and Shippers convention, Shamrock Hotel, Houston, Texas. Association headquarters: 306 E. Jackson St., Harlingen, Texas.

Nov. 30-Dec. 4—Vegetable Growers Association of America annual convention, Chase Hotel, St. Louis, Mo. Convention exhibits and arrangements: Dr. H. D. Brown, VGAA Sec'y, Ohio State University, Columbus 10, Ohio. Publicity: Max Chambers, Preston, Md.

AMERICAN VEGETABLE GROWER

WHAT'LL IT MIX WITH?

That is the important question in economical spraying. The compatible nature of spray materials is mighty important in safe and effective spraying and AMERICAN VEGETABLE GROWER has produced an ingenious

SPRAY COMPATIBILITY CHART

which tells at a glance just what materials will mix safely. Printed in three colors, mounted on Bristol board paper, it is an accurate guide in the safe and successful mixing of all spray chemicals.

Better send for a copy—25c each

AMERICAN VEGETABLE GROWER,
Willoughby, Ohio.

Enclosed is 25c. Send Compatibility Chart to:

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NEW VARIETIES

Nematode-Resistant Sweet Potato

A nematode-resistant Jersey-type sweet potato resulting from breeding work at the Oklahoma Agricultural Experiment Station is being made available to states east and north of Oklahoma which grow this type of potato. It is designated "Okla. 46" by the breeder, Dr. H. B. Cordon of the Oklahoma station horticultural staff.

Okla. 46 developed among a group of crosses in which Jersey-type sweet potatoes were being used as one of the parents in order to introduce nematode resistance into the moist-fleshed type desired in Oklahoma and other southern markets.

Seed stock of Okla. 46 is expected to be made available in "Jersey-type" states where the variety is released.

Advantages of Okla. 46 include nematode resistance and some tolerance to soil rot. It also ranks high in yield among the Jersey types.

The roots of Okla. 46 are well above present commercial varieties of the Jersey type in carotene, and they have a good ascorbic acid content. When baked, they have an attractive orange color, but show some of the "dryness" characteristic of the Jersey group. They are of medium size and generally smooth like those of other Jersey varieties.

Paste-Type Tomato

Red Top is a new paste-type tomato developed by W. T. Tapley at the New York Experiment Station at Geneva which has created widespread interest among growers and processors.

It is a small plum shaped fruit which ripens to a deep red color on small compact plants.

Tomato pulp and paste rank high in total volume of processed tomato products, and at present San Marzano, King Humbert, and Italian Pear are the chief varieties available for paste. Under New York conditions, however, these varieties are very slow growing.

Because of this, Red Top is attracting wide interest. Yields averaging 17 tons per acre were obtained in tests around the state last year. Maximum production in western New York was procured during the second, third, and fourth weeks of September.

Another feature that makes Red Top attractive is that the fruit keeps well on the vine for a long time without deteriorating. This makes it possible to take the bulk of the crop in two pickings.

HERE'S A COMBINATION You've Been Looking For



SUBSCRIBE FOR BOTH
AT THE SPECIAL CHARTER DISCOUNT

FROM POMOLOGY TO OLERICULTURE*

*The culture of edible vegetables.

The AMERICAN FRUIT GROWER with 70 years experience in fruit production is entering the vegetable field with a new magazine entitled, AMERICAN VEGETABLE GROWER. We will offer vegetable growers the same counsel and guidance that the fruit growers have enjoyed down through the years.

The articles in AMERICAN VEGETABLE GROWER will be written by the Nation's best authorities on vegetable production. We will cover:—Soils, Fertilizers, Conditioners and Fumigants—Seeds and Plants, particularly new strains and varieties for increased production—Insect and Disease Control with emphasis on the new organic materials for better control and larger yields—Sprayers and Dusters for easier application of Insecticides and Fungicides—Consumer Packaging for greater profits. Merchandising helps to develop new sales outlets. These and many other features are planned for early issues of AMERICAN VEGETABLE GROWER.

FOR A LIMITED TIME WE ARE OFFERING A SPECIAL LOW COMBINATION CHARTER DISCOUNT

Here's the deal—The regular subscription rate for AMERICAN VEGETABLE GROWER is \$1.00 for one year, \$1.50 for two years and \$2.00 for three years. The rates for AMERICAN FRUIT GROWER are the same.

For a limited time, we will accept one-year combination charter subscriptions at the special price of \$1.50 for both AMERICAN VEGETABLE GROWER and AMERICAN FRUIT GROWER. In addition we will send you FREE OF CHARGE our Compatibility Chart for Insecticides and Fungicides, which has been reprinted in three colors on heavy board suitable for mounting. Or, if you like, we will enter a two-year subscription to AMERICAN VEGETABLE GROWER at the special price of \$1.00 and also send you our new Compatibility Chart.

Special Introductory CHARTER OFFER

The AMERICAN VEGETABLE GROWER, Willoughby, Ohio

() Enclosed is \$1.50 for a one-year subscription to THE AMERICAN VEGETABLE GROWER and AMERICAN FRUIT GROWER. Also send me your latest Compatibility Chart.
() Enclosed is \$1.00 for a two-year subscription to AMERICAN VEGETABLE GROWER, and send me your latest Compatibility Chart.

Name _____

Address _____

City _____

State _____

Kind of crops grown _____

Acreage _____

Use Irrigation: Yes () No () Operate own Packing Shed: Yes () No ()

Offer good only in U.S.A.

The Importance of the Vegetable Industry

THE VALUE of vegetable crops in America has been set by the USDA at 1,110 million dollars in 1952. This is a big and growing sum and does not include Irish or sweet potatoes.

Twenty-eight crops make up the list as follows:

Artichokes	Eggplant
Asparagus	Escarole
Beans (green, lima)	Honey ball melons
Beans (snap)	Honey dew melons
Beets	Kale
Broccoli	Lettuce
Brussels sprouts	Onions
Cabbage	Peas
Cantaloupes	Peppers (green)
Carrots	Pimentos (processing)
Cauliflower	Shallots
Celery	Spinach
Corn (sweet)	Tomatoes
Cucumbers	Watermelons

Further, of the 28 crops listed, 27 are used for fresh market and 11 for processing, with values of 836 million dollars for fresh and 273 million for processing.

The relative importance of processing is shown better by acreage and tonnage than by price. The 1952 acreage of fresh market vegetables was

2,002,120 acres with a tonnage of 9,409,200 tons, as compared with 1,807,050 acres for processing with a tonnage of 6,549,200 tons.

Still further, the vegetable industry is well distributed throughout the United States. Thus, the North Atlantic states boast an acreage of 539,770, the North Central 972,490, the South Atlantic 780,960, the South Central 533,840, and the Western states 982,110, for a grand total of 3,809,170 for the nation.

To these must be added 1,398,000 acres of potatoes with a production of 347,504,000 bushels and 326,000 acres of sweet potatoes with a production of 28,292,000 bushels. And, thousands of local market gardeners grow vegetables that are not included.

These are all sizeable figures and indicate the strong position in which the vegetable industry finds itself. They show also the great diversity and competition in vegetable crops these days.

The industry has had good leadership in the past. It merits and demands increased attention.

For More Profitable Vegetable Production

IT SOMETIMES is hard to grasp the idea that we must constantly be adjusting and changing our procedure to meet new conditions. Nothing is more sure than change and the test of good management is to: 1) understand what changes are taking place, and 2) take action to meet the new conditions.

The best course to follow varies according to local and many times personal conditions. However, there are several principles with which to guide our efforts on a broader overall basis. We know that as vegetable prices rise they tend to go up faster than costs. On the other hand we know that when prices go down they fall more rapidly than costs which tend to be slow moving. It is becoming more evident that we are approaching or are in a leveling off period and prices may be lower and competition more intense.

Low costs, high quality production, and efficient marketing practice will pay off in the years ahead. The alert

vegetable grower will check and double check his fertilizer program. As Malcolm McVickar points out on page 12, fertilizers have a direct effect on yields and high yields are the way to lower costs per unit of production.

To know, instead of guessing, is good insurance. Test soil for lime and fertilizer deficiencies. Plan fertilizer application for best possible placement so the crop gets the greatest benefit from the fertilizer.

To insure big yields of good quality vegetables follow state recommended pest control programs. Don't stint in purchase of high quality seed and certified plants.

Look upon irrigation as insurance. A drought can wipe out hard-earned investment in seed, fertilizers, and labor with no regard for peace of mind or pocketbook. According to latest estimates, there are now between 800,000 and 900,000 acres under irrigation in humid areas where rainfall averages over 10 to 20 inches

a year. The idea that rainfall is one of the factors affecting plant growth that we can do nothing about is no longer true.

Follow through with good harvesting and marketing practice. The amount of spoilage through poor handling that occurs each year is tremendous. Make sure of an adequate supply of harvest labor by planning closely with the local farm labor office. Keep up-to-date on best handling, storage, and packaging practice. Save trucking charges by leaving the culls in the field if selling to the canner.

As competition becomes keener, good sound production and marketing plans will pay off. Vegetable growing is a risky enterprise, but many of the risks can be eliminated or modified by good management. The grower who takes a calculated risk and knows the consequences is immeasurably better off than one who jumps into a situation and thinks about it afterwards.

Do Soils Need a Rest?

RESEARCH on soil structure is receiving added impetus by reports of deterioration in the structure of soils which are intensively worked in vegetable production. Many believe that evidence of formation of crusts and in some cases plow pans at the bottom of the furrow is related to decrease in organic matter.

It is thought that loss of organic matter is due to continuous tilling of specialized crops where growers are unwilling to follow a rotation to rebuild the fertility of the soil. There is evidence that these soils are becoming more compact, and do not drain as readily, resulting in more run-off and increased erosion.

The discovery of soil conditioners such as Krilium offers a new tool of great importance in research on soil structure. For practical use the new conditioners are expensive but a method has been worked out to make application in narrow rows on top of the new seeding. In this way the germinating seed can get through the soil crust at a cost of about \$5 an acre.

The problem of soil structure has wide ramifications in the vegetable industry. It deserves a place of importance in long range research activities.

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FRED H. VAHLING, INC.
NEW YORK, N. Y.



for POTATOES, ONIONS,
ORANGES, GRAPEFRUIT,
SWEET POTATOES

IV LABOR SAVINGS add up when you ship in Union Master Potato Bags. One Master holds ten 5-lb. Vent-Vu bags or five 10-lb. units. A carload in Master Bags means handling only 800 units, as against 4,000 units of 10-lb. consumer bags. Your savings on handling alone pay for the extra protection.

Can be wire-tied or sewn.

Double layer of wet strength kraft insulates potatoes against sudden temperature changes.

Made with or without Pickup handles (of reinforced crepe paper).

Strong brand name promotion in up to four colors.

Wet-strength paper for safety from breakage because of moisture.

Big window for selling display.

Fills, loads, stacks faster than any other form of visible packaging.

Lacing of colorful cotton mesh for appearance, ventilation, protection.

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Ties-in with United Fresh Fruit & Vegetable Assoc. "Sack-Fax" drive to increase potato use.

PREMUM grades move faster when you pack them in Vent-Vu.

Take the case of Fred H. Vahlsging, Inc.

This experienced merchant uses Vent-Vu mesh window bags for his best potatoes. His records prove that Vent-Vu permits complete ventilation, dependably protects his merchandise, makes the greatest sales use of his potatoes' fine appearance.

Like other users, this leading packer knows you can ship Vent-Vu safely all over the country. Layers of wet-strength kraft safeguard potatoes against temperature changes, moisture, bruising and discoloration.

Vent-Vu has by far the finest record of successful potato merchandising of any mesh window bag. More growers use Vent-Vu than any other visible package for potatoes. Put this outstanding package to work for you.

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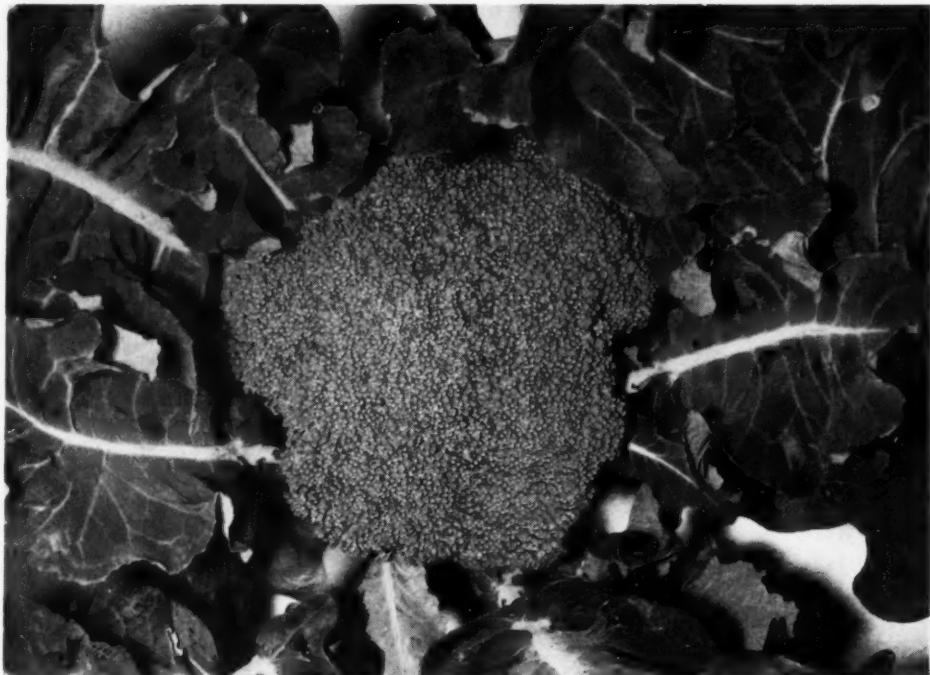
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Union Vent-Vu Bags.

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BROCCOLI

a crop of increasing importance to the vegetable grower

Not so many years ago, broccoli was just green broccoli or Calabrese, grown in small volume for a limited market. With its rapid rise in popularity, growers have found a need for strains and varieties adapted to local conditions—and the Asgrow breeding department has been developing them. Shown above is Grand Central, our latest introduction for early mid-season harvest, named for its large, compact central head. This is followed by a prolific yield of sprouts. Asgrow Seeds are bred to bring you better crops; ask your dealer for them or write our nearest address for further information.



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